Restricted Drilling May be Extended Throughout Mid-Continent

By Lawrence E. Smith
N. P. N. STAFF WRITER

HAVING gained from Secretary Work a better decision on the operation of newly opened Osage county pools than they had hoped, the Mid-Continent Oil & Gas Association went into action March 23 to extend a restrictive production policy to all Oklahoma and Kansas.

The secretary not only placed a restriction of 50 barrels per day on wells on the four quarter section tracts surrounding the larger of the two discovery wells, which operators had asked, but applied the same limitation to six more tracts to be leased by auction March 28-29.

The only part of the operators' request that was not met specifically, was the proposal to limit drilling on the four tracts to offset wells to the discovery well, that of the Kay County Gas Co. in 22-24-7E.

Interpretation of the decision, however, indicates that it covers the drilling destriction without mentioning it. It is not likely that the operators who buy the leases on these tracts will hasten to develop and shut in the wells to 50 barrels.

The period for which they are so to be shut in is the duration of overproduction, as determined by the secretary.

Pursuant to its resolution of March 15, the Kansas-Oklahoma division met to consider extension of the restrictive policy. Heretofore, in the Mid-Continent, this has been handled by the Seminole operators, working through the umpire and a committee. The association has played no part, beyond the passing a resolution commending the Seminole operators.

While this broadening of the curtailment policy had been started before the committee conferred with Secretary Work, it was reported that the secretary asserted that, unless it was followed up vigorously, he would feel under no obligation to continue the restrictions he has set up in the Osage.

After several members had spoken, urging that action be taken to use all "persuasive and other lawful means", to induce operators in all prospective areas to restrict drilling, W. N. Davis, president of the general Mid-Continent Oil & Gas Association, said that the other divisions of the association should get into the work also.

Other speakers agreed with this, saying that Louisiana has some potential territory that should be restricted in drilling and that the Texas division might be able to help with the curtailment work already going on in that state.

Mr. Davis moved the appointment of a committee by the Kansas-Oklahoma division to prepare definite proposals to the other divisions and asserted it might be well to hold a general meeting of the main association. The resolution was adopted and S. C. Denton, vice president of the Mid-Continent Petroleum Corp., president of the Oklahoma-Kansas division, was asked to name the committee.

It is not intended that the association should take a hand in the Seminole restrictive work, which is being ably handled. Outside that district there is not much for the newly authorized committee to work on in Kansas and Oklahoma.

The Oxford pool in southern Kansas is the most active section in that state, but it is about 80 per cent drilled and can scarcely be shut down now. The Allen field, of Pontotoc and Seminole counties, Oklahoma, is in much the same condition. Outside of these, no pool is in the making which promises material production.

It is the thought of the association, however, that the committee should keep itself informed on all wildcats and be in readiness to propose curtailment when any one promises to open a pool.

The March 23 meeting was addressed by J. S. Cullinan, prominent industrial and oil man, head of the American Republic Corp., whose producing history goes back to the beginnings of the industry. Mr. Cullinan was outspoken in his opposition to the plans now under way to curtail Winkler county, Texas, production.

He said any operator who goes into such a plan lays himself liable to prosecution for violation of the anti-trust laws of Texas. A broader basis for the conservation work must be established, he said.

Mr. Cullinan's plan proposes, in view of the excess production in sight in California, Oklahoma and Texas, that actual production be reduced in new flush pools in those states to the extent of at least 20 per cent and that imports of crude be held to 10 per cent or less of domestic production.

No restrictions would apply to old pools and encouragement should be given to operators there to prolong the life of such territories as long as possible, he says.

Problems as to number of wells to be drilled, production from such wells, amount of oil to be run to storage, and so on are to be worked out between producers and pipe line interests. Any plan for restricted production is to be submitted to interested state executives in the three states for their approval or modification.

There is no question that Secretary Work's granting of the operators request has greatly expedited the cooperative throttling of production. The two wells, about five miles apart, which opened new pools, represent about all that is potentially serious in the Osage.

In 22-24-7E is the well which was considered the more alarming as a pool opener. It is holding up to better than 1,000 barrels per day. Its high mark was 1,730 barrels in 24 hours. It is in the SW quarter of the section. The oil lease on that quarter and the other three of the same section are to be sold at next sale.

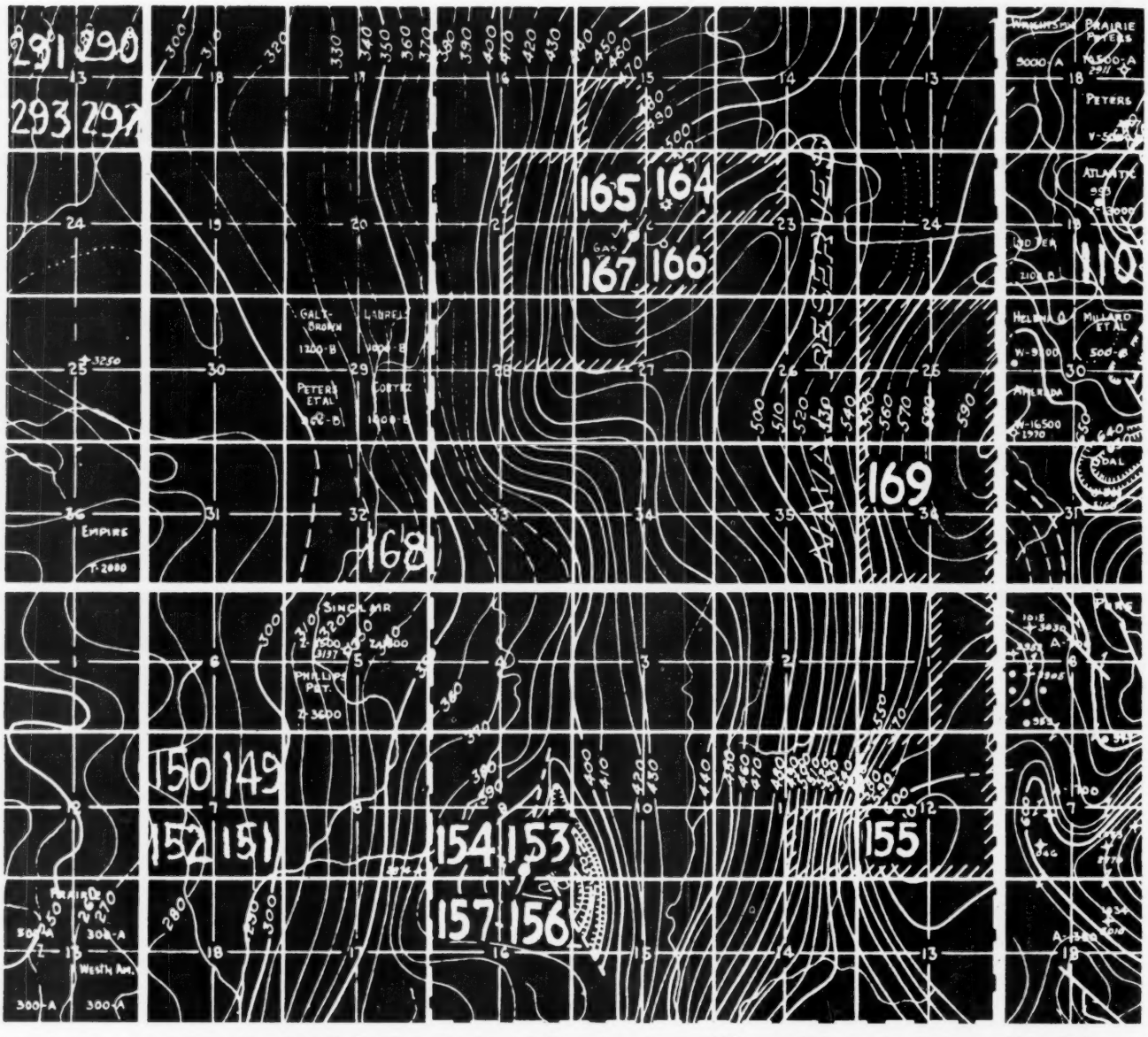
The 50-barrel limitation per well was imposed by the secretary on these four tracts and on the northwest quarter of Sec. 36 of the same town-

Three a. m. Delivery Service

Fred E. Bergfors, Quincy Oil Co., Quincy Adams, Mass., and a few New England jobbers attending the Chicago meeting of the Independent Oil Men of America, were anxious to read the March 21 issue of NATIONAL PETROLEUM NEWS before they got back to their offices and their regular copies.

So they telephoned from Chicago for copies to be put aboard their train as it passed through Cleveland.

The train went through at three in the morning. The copies were delivered by messenger to the porter of their Pullman, with instructions to present them the first thing in the morning.



Map showing parts of Twps. 23 and 24 N, R. 7E, in the Osage Indian reservation in Oklahoma, which contains the leases which will be up at the coming Osage sale March 28 and 29, on which Mid-Continent operators succeeded in having production restrictions applied. These tracts are southeast of the Burbank field. Tracts prominently numbered are those restricted. The two discovery wells are shown which have drawn attention to this area. One is towards the bottom of the map, in SW, SE, SE. of Sec. 9, shown in the lower part of Tract 153. The other is towards the upper part of the map, in NE, SW. of Sec. 22, in the upper part of Tract 167. (Map courtesy of Kirk F. Nagle, Tulsa. Geological contours by U. S. Geological Survey)

ship, about two miles from the well.

The other well, also drilled by the Kay County Gas Co., while not so promising as the one in Sec. 22, was improved by deeper drilling. It made 1,113 barrels on March 20 and fell to 720 barrels the following day. It is cutting about two per cent.

It is in the SE of 9-23-7E and this discovery lease and the three others in the same section will be sold subject to the 50-barrel restriction; also a lease on the SW of Sec. 12 in the same township, a little more than two miles from the discovery.

The two tracts in outside territory from the two wells are being restricted in production because of favorable geological conditions. The discovery tracts will be leased to the highest bidder, as the Kay County Company has only a gas lease and was drilling under that lease.

National Transit to Pipe Crude From Seaboard to Franklin

CLEVELAND, March 26

PROBABLY by May 1 crude oil will be flowing inland from the Atlantic seaboard.

Pipe line systems which for more than 40 years have been used to transport Pennsylvania, Ohio, Indiana-Illinois and later Mid-Continent crude oils to Atlantic coast refineries, will turn the flow of oil westward.

West Texas crude will be shipped by pipe line to the Gulf, by tankship to Point Breeze on the Delaware river near Philadelphia and by pipe line to Franklin, Pa., refinery of the Atlantic Refining Co.

What saving in transportation will be effected has not been ascertained, it was said at the Philadelphia headquarters of the Atlantic company, and no estimate would be ventured because the tariff for the new traffic has not been approved so far by the Pennsylvania Public Utilities Commission.

The lines used will be those of the National Transit Co. and the Northern Pipe Line Co. The eastbound capacity of the system is 8000 barrels a day, but it was said this volume may not be carried in westbound traffic because the country through which the lines are laid slopes generally from west to east.

Alterations at pump stations, such as changes in manifolds and suction

lines, are being made, said E. D. Williams, president of National Transit Co., whose headquarters are in Oil City, Pa. Mr. Williams said the oil could be transported more cheaply under the projected pipe line—tankship—pipe line routing than through the transcontinental chain. He could not give an estimate of just what the economy would amount to.

Eastern pipe lines have suffered severely since 1923, the year California crude oil became available at low prices to Atlantic seaboard refineries. Last year the eastward crude oil traffic showed some improvement, but operators have been pessimistic about the future of the business.

The National Transit Co. and Northern Pipe Line Co. are of the Standard Oil group of pipe lines. The National was a holding company for other pipe lines until the dissolution in 1911. It then resumed its gathering business in Pennsylvania. The lines allotted to it in the dissolution decree formed a connecting line in the chain of pipe lines from north Texas to the Atlantic coast.

When the Atlantic coast plants found they could get a large part of their crude more economically by water, traffic in the pipe lines diminished. About two years ago stockholders of the Crescent Pipe Line Co., another Standard Oil line, voted to dissolve the company. Its lines were torn up and the pipe junked. Liquidation was completed last year.

In his annual letter to stockholders this year D. S. Bushnell, president of the New York Transit Co., wrote that lines of that company might have to be abandoned unless crude oil traffic eastward increased.

The experiment of the Atlantic Refining Co. and the National Transit Co., which is expected to begin in about 30 days, may cause other eastern pipe line companies to consider reversing the flow of crude through their lines. The New York Transit serves the plants of the Vacuum Oil Co. at Olean, N. Y., and the Standard Oil Co. of New York at Buffalo. The former is running considerable Bradford crude which it collects in its own lines.

Practical Field Men Wanted In Production Division

(By Telegraph)

TULSA, Okla., March 26.—At the organization meeting of the Mid-Continent division of the development and production engineering division of The American Petroleum Institute of which C. D. Watson, Carter Oil Co., is chairman, C. V. Milliken, Amerada Petroleum Corp., was elected vice chairman, and W. K. Whiteford, Barnsdall Oil Co., secretary.

The session was devoted to planning the future activities. C. A. Young, executive secretary of the general division, said that the greatest benefit for the organization would result from the inclusion of field superintendents and foremen and from engineers who are actually doing the field work. The former have many ideas based on practical experience which can be developed by the technicians.

The first general meeting of the division will be held in June in Colorado Springs. It will take place immediately after the meeting of the Standardization Committee of the A.P.I., which meets June 12, 13 and 14. T. E. Swigart, of the Shell Co., Los Angeles, has been appointed chairman of the program committee for the meeting.

I.O.M.A. Hires Association Man As L. V. Nicholas Retires

LOU HARRINGTON
Manager of I. O. M. A.

Staff Special

CHICAGO, March 27

TRUSTEES of the Independent Oil Men of America, on March 21, the last of the 3-day convention in Chicago, employed Lou Harrington to replace L. V. Nicholas in his previous capacity of active manager.

Mr. Harrington is a professional association man, recently with the Chicago Real Estate board and now with the National Association of Real Estate boards. He takes up his work with I. O. M. A. April 1.

Filling the vacancy left in their organization by the resignation of Mr. Nicholas, president and active manager since 1922, was the most conspicuous event of the I. O. M. A. convention. The election on March 19 called to the president's chair E. H. Hilpp, Kentucky Consumers Oil Co., of Louisville.

No change has been made in the office organization except the replacement of Mr. Nicholas. R. A. Overholser continues as assistant to the manager in charge of membership. C. Y. Hinchie continues in charge of publicity. E. E. Jensen will remain in charge of the Red Hat motor oil department. J. S. Hoagland's status as refinery representative for the refinery members remains unchanged. And Eva Arnstein holds over as secretary-treasurer.

Mr. Nicholas' future plans have not been announced further than to say that he starts a vacation as soon as Mr. Harrington gets on the job. Until April 1 he will be at his desk at 624 South Michigan avenue.

Jack Nourse, head of the Nourse Oil Co., Kansas City and one of the several compounders of Red Hat motor oil, addressed the meeting on the possibilities for cooperative marketing of Red Hat motor oil.

Index to Coming Meetings

American Oil Burner Association, Hotel Stevens, Chicago, April 3, 4, 5, 1928.

American Chemical Society, St. Louis, Mo., Apr. 16, 17, 18, 19.

Nebraska Independent Oil Men's Association, Hotel Kearney, Kearney, Neb., Apr. 18, 19.

Texas Independent Oil Men's Association, San Antonio, Apr. 18, 19.

National Petroleum Association, Cambridge Springs, Pa., April 19, 20.

Kansas Oil Men's Association, Hotel Lassen, Wichita, Kan., April 26, 27.

Natural Gasoline Department of American Gas Association, Texas Fair Grounds, Dallas, May 7, 8, 9, 10.

National Oil Scouts of America, Amarillo, Tex., May 21, 22.

Natural Gasoline Association of America, Hotel Mayo, Tulsa, May 22, 23, 24.

Study of Need of State Oil Laws In Southwest is Urged

OKMULGEE, March 24

THE Okmulgee District Oil & Gas Assoc. has given consideration to the recent proposal of Secretary Work, chairman of the Federal Oil Conservation Board that governors of oil producing states study the question of uniform state legislation on oil development.

The Okmulgee association, by resolution, asked Governor Johnston, of Oklahoma, to ascertain the views of the governors of Kansas, Texas, Louisiana and Arkansas and suggest to them that a joint study be made.

Inquiry by NATIONAL PETROLEUM NEWS failed to bring a reply from Governor Johnston as to his plans or opinion of the proposal.

The Okmulgee association's resolution was drafted by David M. Logan, a state senator and chairman of the senate's oil and gas committee; E. P. Jones, past president of the association and Charles I. O'Neill, secretary of the association.

It reviews the discussion on the necessity for revision of laws and bringing them into uniformity, and asserts that a study should be made of conditions in the five oil states in the southwest.

The association proposed that Governor Johnston take the following action:

1—Propose to the governors of the other four states in the district that each appoint three representatives, making 15 in all, to make an exhaustive investigation of the necessity and desirability of conserving natural gas for oil production and other legitimate purposes and "to seek other practical and efficient remedies to stabilize the oil industry in each of the states named".

That, if the proposed committee finds legislation to be necessary, it be empowered to recommend the form.

That it make appropriate recommendations for uniform laws in the five states, if it finds such necessity exists.

2—Propose that such representatives be experienced, practical and representative oil producers and refiners and that such committee be authorized to appoint sub-committees of technical men.

3—Outline his proposals in such manner that the oil industry, the public and the state officials addressed will be free to accept, reject, modify the recommendations, according to the conditions and sentiment in each of the states.

4—Proceeds, in the event of acceptance by the other governors, to name the representatives for Oklahoma.

5—Ask of the Federal Oil Conservation Board, pending the creation of the proposed committee of 15, to direct the Committee of Nine or some other federal agency to make further study of gas conservation, the desirability of state legislation, and submit the results of such study to the proposed committee of 15.

It is emphasized throughout the resolution that the Okmulgee association does not commit itself to any program, nor does it affirm the necessity of any legislation, but that it is open-minded and desires to see the much-discussed question of gas conservation studied comprehensively.

Lubrication is On Program Of A.C.S. Meeting

TULSA, March 26.—Carl L. Johnson of the Manhattan Oil Co., secretary of the Petroleum Division of the American Chemical Society, has announced the program for the spring meeting. The meeting is at St. Louis, April 17, 18 and 19.

On the afternoon of April 17 the petroleum division of the society will hold its first session in conjunction with the industrial division. The session will be devoted entirely to a round table discussion on lubrication. R. E. Wilson of the Standard Oil Co. of Indiana, will be in charge of this meeting.

Following is the program for the remaining two days:

Wednesday, 9:30 A. M.

S. H. Diggs and S. F. Campbell. "Chemistry of Lead Soaps made from Litharge and Neutral Fat". W. F. Faragher, J. C. Morrell and I. M. Levine. "Determination of Olefins and Aromatic Hydrocarbons". E. C. Alderman. "An Analytical Method for the Separation of Bright Stocks and Neutral Oil Mixtures". Stuart M. Rodgers and Linden R. Adkins. "A Micro-Saybolt Viscosimeter". Hal B. Coats and George G. Brown. The Vapor Pressure of Hydrocarbons.

Wednesday, 2 P. M.

Discussion of American Petroleum Institute Projects. To be led by Members of the Central Petroleum Committee of the National Research Council.

Gladys E. Woodward. "The Use of Organic Solvents for the Extraction of High Sulfur Oils from Crude Petroleum. A Volumetric Method for the Estimation of Sulfur in Crude Oils; an Adaptation of the Nikaido Method. Silica Gel as a Reagent for the Extraction of High Sulfur Oils from Crude Petroleum".

Charles D. Hurd and Leroy U. Spence. "The Pyrolysis of n-Butane and iso-Butane". S. C. Lind and George Glockler. "The Action of Electrical Discharge on Ethane".

Thursday, 9:30 A. M.

H. S. Davis. "Problems in the Analysis of Unsaturated Hydrocarbon Mixtures". Robert N. Pease. "Thermal Decomposition and Oxidation of the Simpler Hydrocarbons". P. Bergstrom, L. M. Ellis, Jr., and E. Emmet Reid. "Reaction of a Variety of Known Mercaptans in a Naphtha Solution with the 'Doctor' Solution". F. E. Bartell and F. L. Miller. "Displacement of Petroleum Oil from Oil Bearing Sands—1. The Degree of Wetting of Silica by Crude Oils". A. Skinner and G. G. Brown. "True Volatility from the A. S. T. M. Distillation". Robert A. Baxter. "The Refining of Shale Gasoline".

Thursday, 2 P. M.

Robert A. Baxter. "The Effect of Variations in Retorting Conditions on the Quality of Oil Produced from Shales". G. G. Brown. "Anti-Knock Testing". J. C. Geniesse and H. F. Huff. "Effect of Volatility of Petroleum Fractions on Detonation Value". M. Garcia. "Heat Transfer in Oils Flowing Through Pipes". D. C. Bridgeman. "Dew Points of Air-Gasoline Mixtures from Distillation Curves".

Suit for Big Lake Crude Accounting Amended

HOUSTON, March 23.—An amended petition is being prepared in the state's suit against operating and crude purchasing companies in the Big Lake field of Reagan county.

The action now demands only an accounting for the one-eighth royalty oil which the state charges was sold the Reagan County Purchasing Co. (Marland and others) at less than the market price.

No further effort is being made to gain cancellation of oil leases worth millions of dollars in the Big Lake field, which, it had been charged, were obtained originally by the Texon-Group 1 interests without compliance with the 1917 general permit act then covering University of Texas leaseholds.

Payment for the royalty oil in question was made by Reagan County Purchasing Co., on the basis of a contract with the two operating interests in the field, which provided for buying the crude at an average of the posted price of five Mid-Continent purchasing agencies for oil of similar gravity.

The field is owned in its entirety by the Big Lake and Texon-Group 1 companies, who also hold 49 per cent of the stock in the Reagan Purchasing Co. Marland, which owns the other 51 per cent, formed this company to gather and deliver Big Lake field crude to its customers; thereafter making a contract sale to Hum-

ble Oil & Refining Co., at the field price plus pipeage.

The state contends for royalty payments on a basis higher than the field price paid to producing interests, notwithstanding that, under the Marland contract, it gets a considerably higher price for its oil than the posted schedule in other west Texas sulfur crude areas.

Price War Again Looms At Los Angeles

LOS ANGELES, March 24.—Sales departments of both large and small companies are giving more attention to tank wagon and service station prices this week than to tank car or export markets.

Some 6-cent differential contracts signed during the price war here a year ago are expiring. It is the opinion of many students of prices that if these 6-cent contracts are renewed, another price war will be started. Rumors are current that at least two major companies have promised certain of their customers that their 6-cent contracts will be renewed.

New contracts offered the last few months call for a 3-cent differential with a 1-cent bonus at end of the month. But not enough of these contracts have been signed to affect the market.

The Standard's posted differential is 4 cents but many 5 and 6-cent contracts are in force. One small refiner some two weeks ago signed up a body of service stations at Pasadena for 12 months for a 6-cent differential. This business was taken from several other sellers.

R. D. Rogers Visits in Mid-Continent

TULSA, March 26.—R. D. Rogers, general superintendent of the Bayonne refinery of the Tidewater Oil Co., has been making a trip through the Mid-Continent field visiting plants of the Tidal Refining Co. and friends in the Mid-Continent. With him have been Frank Keebler, chief engineer, and E. Ellsburg of the engineering department who is a submarine expert in addition to being a refiner. Mr. Ellsburg has been called by the government to aid in raising sunken subs twice in recent months.

LOS ANGELES—Elmer Bolton, formerly associated with the Illinois Pipe Line Co., Casper, Wyo., is now connected with the Ohio Oil Co., Bakersfield, Cal.

LOS ANGELES, March 24.—Rio Grande Oil Co., announces the removal of its Los Angeles offices on March 26, to Suite 855 Subway Terminal Bldg., 417 South Hill street.

Furnace Oil Specifications Drawn by Burner Men

Staff Special
TULSA, March 26

THE American Oil Burner Association has drawn specifications for furnace and fuel oils which have been presented to members for formal adoption. In many respects the specifications are the same as those recommended by Committee D-2 of the American Society for Testing Materials.

The burner association has proposed six grades of fuel. Three cover domestic heating oil and are to be known as furnace oils. The fourth grade is one suitable for some domestic burners and some industrial installations. The last two are suitable only for industrial use.

Specifications for the various oils have been tabulated for ease of comparison in Table No. 1. In addition to the specifications listed it is required that the three furnace oils and light fuel oil be free from water, acid, grit and fibrous or other foreign matter likely to clog or injure the burner or valves.

Medium and heavy fuel oils do not require entire freedom from water but if required shall be strained by being drawn through filters or wire gauze of 16 meshes to the inch. The clearance through the strainer shall be at least twice the area of the suction pipe and the strainers shall be in duplicate.

Although light fuel oil does not conform exactly to government specifications for Bunker A, oils sold for Bunker A will come under this classification. The medium grade of fuel is identical with Bunker B and the heavy grade with Bunker C oil.

Managing Director Howard Bennette of the Western Petroleum Refiners Association has sent copies of the specification to all members of that organization for their study. He announced in the current bulletin of the association that comments received at his offices from the refining industry will be compiled and forwarded to the burner association for attention.

While the pour point specification for furnace oils will be difficult if not impossible for some refiners in the Mid-Continent to meet, other requirements are not considered too stringent by many.

Placard the Bad Holes, Advises Thunderbird

MILWAUKEE, March 22.—"Spring brings its cuss words and sink holes", says the March number of the Thunder Bird, official organ of the Wisconsin Independent Oil Jobbers' association. The editorial says:

"A wise oil jobber may perform a moral and civic service to motorists and obtain effective advertising for his products by getting permission to have signs printed informing drivers of bad holes in the road.

"On the same card the jobber may discuss the qualities of his products. Motorists will appreciate the placarding of holes in the road and will feel disposed to try some of the oil man's merchandise at the next opportunity."

Table No. 1. Proposed Specifications for Domestic and Industrial Fuels Drawn by American Oil Burner Association

	Flash Point Minimum	Flash Point Maximum	Water and Sediment Maximum	Pour Point Maximum	Distillation 10%	Distillation 90%	End Point	Viscosity Saybolt Universal at 100 F. Maximum	Saybolt Furol at 122 F. Maximum
Furnace Oil Light....	110F.	165F.	Trace	0F.	420F.	...	600F.	...	...
Furnace Oil Medium.	125	190	Trace	0	440	620	...	...	...
Furnace Oil Heavy...	150	200	0.1%	0*	460	675	...	55 Sec.	...
Fuel Oil Light....	150	250	1.0	15	...	...	...	125 Sec.	...
Fuel Oil Medium.	150	..	1.0	...	...	...	...	...	100 Sec.
Fuel Oil Heavy...	150	...	2.0 Sediment 0.25	...	...	...	...	...	300 Sec.

Notes:—Minimum flash point on Furnace Oils shall be the legal instrument in locality where oil is sold or the Pensky-Martens Closed Tester. All other flash point tests to be made by the Pensky-Martens Closed Tester.
Water and Sediment tests to be made by standard centrifuge.
Pour point test to be by Tentative Method D 97 - 27 T.
*Pour point of Heavy Furnace Oil may be as high as 15 F. in localities where the average temperature is 40 F. between Oct. 1 and May 1.
Distillation test of Furnace Oil, Light, D 86, others by D 158 - 25 T.
Viscosity tests by method D 88.

Winkler Crude Forced Into Storage While Proration Holds Up

By Paul Wagner
N. P. N. STAFF WRITER

WITH actual production fluctuating between 180,000 and 200,000 barrels daily in Winkler county from about 100 wells, a good share of which must be stored, the need for prorating measures is generally recognized.

Efforts to iron out a complex crude contract situation to permit prorating have failed so far.

After an all-day session at Austin, March 24 the railroad commission and its advisory committee of oil executives announced another conference will be held at Fort Worth March 29.

When the Hendricks field, of Winkler county, reached a new high production March 24, of 199,616 barrels, from 103 wells, it shoved the daily exploited yield of west Texas sulfur crude fields above 350,000 barrels. About 150,000 barrels of this total comes from other fields than Winkler county.

Fields capable of greatly increased production in Pecos, Crane and Howard counties cause no present alarm because of prorating steps taken or the controlled character of development. Of the last mentioned group of fields only the University pool of Crane county is putting oil into storage and there the quantities are relatively small as compared with Winkler accumulation.

Should failure result from present efforts, at proration then Winkler county operators would be faced with expensive storage programs. Also the highly flushed north end of the Hendricks field of Winkler county would become the scene of the most competitive drilling in west Texas. Small tracts are scattered among the larger leaseholds.

It is on a 10-acre tract, in Sec. 33, block B-26, that Cranfill & Reynolds recently completed a "gusher" well that is being exploited for more than 11,000 barrels daily, pinched production. The well's maximum capability has never been tested, but Tom E. Cranfill of Dallas, one of the owners, estimates it is good for 50,000 barrels daily, open flow.

Oil from this well is being supplied Magnolia Petroleum Co. on its 3,000,000-barrel storage crude contract with Cranfill & Reynolds. Total production of Cranfill & Reynolds from four Winkler field wells, March 15, was 16,630 barrels daily, including the "gusher" mentioned.

It is the necessity for fulfillment of this contract, more than any other detail, that made intricate the problem of prorating Winkler crude. Although details have not been made public, it is reliably learned that a plan has been considered whereby other operators would fulfill this contract, the oil to be "paid back" by Cranfill & Reynolds out of prorated production brought to the surface at a slower rate of recovery.

Mr. Cranfill is known to be willing to prorate his production with other operators after the Magnolia contract has been fulfilled; but whether he is willing to forego the advantage of discovery as applied to the "gusher" well mentioned—through entrance into the proposed group plan of fulfilling his contract—has not been made public.

Offset is Big Well in North End of Hendricks

(By Telegraph)

HOUSTON, March 26.—Southern Crude Oil Purchasing Co., of the Pan American group, March 25 completed its west offset to Cranfill & Reynolds big well in the north end of Hendricks field of Winkler county. It made 500 barrels in a 40-minute test. It is about 100 feet lower structurally on the lime, at 2830 feet, than the Cranfill & Reynolds "gusher" that has been exploited at about 11,000 barrels pinched production.

Roughly 15 miles north of the Hendricks field and two and a half miles southwest of The Texas Production Co.'s Rhodes discovery, in southeastern Lea county, New Mexico, a test of the Marland interests found gas in the lime about 290 feet higher structurally than the Rhodes well.

The Marland test, which is on the Eaves land in sec. 19-26-37, appears to have found the high part of the subsurface lime trend northwest of Hendricks production. Geologists believe it has already indicated major producing capabilities.

This theory would place the Rhodes well and the two small wells of the Roxana & Llano partnership in northern Winkler county near the east edge of the structure. The Rhodes well has been making about 22,000,000 cubic feet of gas and 110 barrels of oil daily for months. The Scarbauer wells about seven miles south of the Rhodes are smaller.

The Cranfill & Reynolds well was a mile and a half in advance of other production in the north end of the field when first completed, although a smaller one of the Atlantic-Collett partnership now offsets it and a number of tests are drilling by Marland Production Co.

Altogether, unfilled contracts covering sales of Winkler crude total roundly 11,000,000 barrels.

These figures include about 2,000,000 barrels yet to be moved in tank car shipments of Independent Oil & Gas Co., from Pyote; 1,000,000 barrels from American Petroleum Co. (J. S. Cullinan interests) from Pyote; about 4,000 barrels daily the Texon-Group 1 interests will handle on contracts said to approximate 1,000,000 barrels; 1,500,000 barrels contracted by Landreth Production Co. to Crystal Oil Refining Corp., Shreveport, and New Orleans Refining Co., in the lower Mississippi river district; 3,000,000 barrels still to go on two contracts of Cranfill & Reynolds for 4,000,000 barrels, including the Magnolia commitment herein discussed; and additional oil contracted by Southern Crude Oil Purchasing Co. of the Pan American group.

The contracts mentioned call for daily deliveries averaging about as follows:

	Barrels
Southern Crude Oil Purchasing Co., and Southern Pipeline Co., to Chalmette Petroleum Corp., Liberty Oil Co., Ltd., and Standard Oil Co. of Indiana	20,000
to Blue Bonnet Refining Co.	2,500
Cranfill & Reynolds	
to Magnolia Petroleum So.	16,500
to American Petroleum Co.	5,000
Independent Oil & Gas Co.	
to New Orleans Refining Co.	7,500
American Petroleum Co.	
to Rio Grande Oil Co.	2,000
to Louisiana Oil Refining Corp.	7,500
Landreth Production Co.	
to Crystal Oil Refining Corp.	1,500
to New Orleans Refining Co.	3,700
Texon-Group 1 interests	
to Pecos Valley Refining Co.	2,500
to J. D. Wrather	1,500
Roxana Petroleum Corp.	
to Beacon Refining Co.	3,000
Total	71,200

AFTER tank car shipments and outgoing pipeline runs Winkler county crude has gone into storage at the rate of fully 120,000 barrels daily.

The Atlantic Oil Producing Co. pipeline from Hendricks field to Midland.

where it connects with the Magnolia's west Texas trunk system, is being increased to 30,000 barrels capacity by installation of pump stations.

The near completion of Gulf and Humble links in their west Texas lines will also add 50,000 barrels of gathering system room; the Humble 30,000 barrels and the Gulf 20,000 barrels.

Shell Pipeline Corp. has 20,000 barrels room in its gathering system for loading tank cars at Monahans and McCamey, but will hook these facilities into its McCamey-to-Healdton 30,000-barrel trunk system when it is completed about Aug. 1.

Five short pipelines from the field to Texas & Pacific tank car loading racks are owned by Landreth Production Co., 20,000 barrels capacity; American Petroleum Co., 15,000 barrels; Independent Oil & Gas Co., 20,000 barrels; Southern Crude Oil Purchasing Co., 20,000 barrels; Texon-Group 1 interests, 10,000 barrels.

Capacities of all types of line will then total 185,000 barrels daily. In the case of proration it would be necessary for each interest to set the quantity of crude it could handle daily. In the case particularly of the interests owning short pipelines to tank car loading racks, what they would handle would be quantities for an assured market after their own contracts were taken care of.

Therefore, it is apparent that market outlet rather than pipeline capacity will govern the nominations for handling prorated crude from the Winkler area.

Meantime, the storage built to handle Winkler crude has grown materially. Capacity of completed tanks in the field and at tank farms along the Texas & Pacific railroad, in Ward county, totaled 6,274,000 barrels, March 10. Stocks of crude on hand totaled 4,567,400 barrels.

Construction under way will accommodate 1,763,000 barrels and grades were being cut for tanks that will provide 1,118,000 barrels more room. Based on a total capacity of 9,155,000 barrels, when these tankage programs are completed, present stocks being 4,567,400 barrels, facilities are being provided for 4,587,600 barrels additional storage.

Magnolia tankage for handling the Cranfill & Reynolds storage contract is under construction, but only a small part of it has been completed.

Landreth Production Co. is reported ordering steel for 25 additional 85,000-barrel tanks, five for its tank farm in Sec. 29, block B-5, Winkler county, and 20 at Monahans, on the Texas & Pacific railroad.

Gulf Production Co. is credited with ordering 20 more 80,000-barrel tanks for Sec. 34, block B-5.

Thirty-one more 64,000-barrel tanks reported ordered by Humble will increase its total Winkler crude storage capacity to 2,888,000 barrels at the Sec. 8, block B-5 tank farm.

Winkler County In a Nutshell

NEW high production mark reached March 24, 199,616 barrels from 103 wells. Daily average for week about 190,000 barrels.

Excess of production over present amount reaching market about 120,000 barrels daily.

Only present market outlets are tank car shipments averaging 40,000 to 50,000 barrels daily and production handled by Atlantic Oil Producing Co., through its 17,000-barrel "shuttle" line to connection with Magnolia Petroleum Co.'s west Texas trunk system at Midland.

Total physical capacity of short pipe lines 105,000 barrels daily, but limited to what tank car shipping market can take.

Capacity of major pipe lines 80,000 barrels daily, when Gulf and Humble begin taking oil through gathering systems under construction, and Atlantic completes work of increasing "shuttle" line to 30,000 barrels daily.

Average daily deliveries called for under crude contracts 71,000 barrels. Includes about 16,500 barrels daily average contracted by Cranfill & Reynolds to Magnolia for field storage and also about 8,000 barrels daily on short pipe line shipment on which deliveries have not begun.

Completed storage for Winkler county crude 6,274,000 barrels. Stocks on hand 4,567,400 barrels, leaving present storage room for about 1,700,000 barrels.

Additional tankage under construction or announced 2,880,000 barrels.

Tankage construction costs 38 to 42 cents a barrel in this part of west Texas, without allowing for carrying expense that always must be reckoned with.

Something had to be done with the oil brought out under more competitive development conditions than existed elsewhere in the salt basin region. Hence the Winkler area is already far ahead of any other single field in that part of Texas as regards storage construction.

Daily average Winkler production by companies, March 15, was:

Company	Number Wells	Prod., Bbls.
Atlantic Oil Producing Co.	8	18,583
Cranfill & Reynolds	4	16,632
Gulf Production Co.	7	16,379
Humble O. & R. Co.	7	26,136
Independent O. & G. Co.	10	4,393
Landreth Production Co.	5	12,339
Magnolia Petroleum Co.	3	3,963
Murchison and others	5	1,110
Pure Oil Co.	5	8,290
Republic Production Co.	2	9,144
Roxana Petroleum Corp.	2	41,154
Southern Crude Oil Pur. Co.	20	18,683
Texon-Group 1	3	7,210
Turman & Maxwell	6	5,202
Totals	97	189,218

Potential production rated upward of 325,000 barrels daily on the same date.

Pipeline runs from all of the west Texas sulfur crude region averaged 140,210 barrels daily in the week ended March 17, as follows:

Company	Line	Barrels
Gulf	Ranger	23,482
Humble	Comyn	38,289
Humble	Ingleside	52,350
Magnolia	De Leon	16,064
Total		140,210

West Texas Refineries handled in the same date:

Humble	McCamey	14,942
Valley	Pyote	1,760
Blue Bonnet	Wickett	2,609
Total		19,311

Tank car shipments, via Texas & Pacific and Kansas City, Mexico & Orient railroads totaled daily 69,824 barrels.

Total sulfur crude shipments daily were 229,348 barrels.

The foregoing does not include about 12,000 barrels of Yates field crude moved daily by Illinois Pipeline Co., from Pecos county, to Del Rio tank farm; nor runs of 5,429 barrels of non-sulfur crude from Howard and Mitchell counties to the Col-Tex Refining Co., at Colorado City.

February tank car movements from Winkler shipping points averaged:

	Barrels Daily
American Petroleum Co.	
To Rio Grande Oil Co., El Paso	2,331
Brownfield & Compton, El Paso	52
Louisiana Oil Refining Corp.	7,377
American Pet. Co., Houston	776
Total	10,536
Independent Oil & Gas Co.	12,317
To New Orleans Rfg. Co.	1,617
Total	13,934
Shell Pipeline Corp.	
To Roxana, Wood River	6,920
To Roxana, East Chicago	2,067
To Star Rfg. & Prod. Co. Ft. Worth	100
Total	9,087

Shell also shipped 8,621 barrels, daily average, to Roxana, Ill., and 3,279 barrels to itself at Texas City, from McCamey, on the KCM&O railroad, all but about 2,000 barrels daily of which was Winkler crude.

Southern Pipeline Co. & Southern Crude Oil Purchasing Co.		
To	Standard, Whiting	3,786
	Standard, Wood River	2,139
	Standard, Sugar Creek	2,393
	Chalmette, New Orleans	2,068
	Liberty, New Orleans	1,933
	Magnolia, Chaison	43
	Total	12,362

Southern also made average daily shipments from McCamey of 281 bbls., to Pecos Valley Power Co., Girvin; Brownfield & Compton, El Paso, 441 bbls.; San Angelo Refining Co., 351 bbls.

Gulf Production Co., shipped 4,683 barrels daily on its Pecos crude with Sinclair Refining Co.; R. H. Paxton shipped 350 bbls., daily from McCamey to San Angelo; The Texas Co., shipped 1,398 bbls., daily to itself at Port Arthur; and Big Lake Oil Co., shipped 360 bbls., daily, of Reagan crude to Rio Grande Oil Co., at El Paso.

Oil Industry Wire Men Form Association

HOUSTON, March 24.—The Petroleum Industry Electrical Association, formed at a Fort Worth meeting, March 22, is intended to weld for mutual helpfulness the entire telephone, telegraph and electrical systems of the various oil and gas companies operating in the southwest.

Eventually, the scope of the organization is expected to embrace the entire country.

T. J. McMahon of The Texas Co., Houston, was elected president; F. S. Leonard, Shell Pipeline Corp., St. Louis, first vice president; C. E. Foster, Oklahoma Pipeline Co., Muskogee, second vice president; W. T. Bulla, the Empire Companies, Bartlesville, treasurer; and H. E. Browne, Prairie Pipeline Co., Independence, secretary.

Directors are R. M. Bayless, Humble Pipeline Co., Houston; Dick Weldon, Prairie Pipeline Co., Tulsa; F. C. Baker, the Marland Companies, Ponca City; H. C. Miller, Pure Oil Co., Pittsburgh; J. H. Borchers, Texas Pipeline Co., Houston; C. A. Pritchard, Continental Oil Co., Wichita Falls; A. J. Balcolm, Magnolia Petroleum Co., Dallas; H. H. Watson, Magnolia Petroleum Co., Dallas; C. O. Shirley, Phillips Petroleum Co., Bartlesville; F. H. Groves, Pure Oil Pipeline Co. of Oklahoma, Tulsa.

New Deep Oil Sand In Cotton Valley

(By Telegraph)

HOUSTON, March 27.—A 3000-barrel well of the Ohio Oil Co., making 44 gravity oil in the Cotton Valley, La., field has opened new deep pay producing horizon at a completion depth of 4683 feet. The well is No. 38 Hodges in SW, SE, of Sec. 15-21-10, Webster parish.

The oil shows a normal temperature and the well is believed to have opened important production at a level approximately 300 feet lower than the deepest of the heavy gas pays in the field. This is the first important oil from the Trinity series beds in north Louisiana, except for production at a similar level in a small area of the Pine Island division of the General Caddo district.

WASHINGTON, D. C., March 27.—A junior petroleum technologist is being sought by the U. S. Geological Survey for duty in California, Colorado, Montana, New Mexico, Oklahoma, Utah and Wyoming, at Washington, D. C. or in the field. Applications must be on file within the Civil Service Commission at Washington not later than April 28.

J. N. HICKS
Member Board of Directors, California Natural Gasoline Association. Mr. Hicks is superintendent of the gas and crude oil division, Superior Oil Co., Los Angeles, Calif.

S. O. New Jersey Gets Foreign Crude Rights

NEW YORK, March 24.—Standard Oil Co. of New Jersey has completed a second contract for the operation of foreign crude concessions which have been held by other interests. The contract just closed is with the Creole Petroleum Corp., the new name of the Creole Syndicate. The land is in Venezuela. The first contract signed last month, was with the Mexican Seaboard Oil Co. for operation of about 125,000 acres held by its subsidiary, the International Petroleum Co., north of the Panuco river in Mexico.

The Creole Syndicate has concessions to about 6,250,000 acres in Venezuela on which are a few producing wells. The Standard of New Jersey will acquire a 51 per cent stock interest in Creole, have a majority on the board, and select the officers. Creole's stock, by vote of stockholders, has been increased from 2,500,000 to 6,000,000 no par shares.

Standard of New Jersey will transfer to Creole Petroleum Corp. all of the stock of the Venezuela International Corp. which owns all the stock of the South American Oil & Development Corp. It will supply Creole with $8,000,000 working capital.

Properties of Creole in the Lake Maracaibo region are owned jointly with and are being operated by the Venezuela Gulf Oil Co., a subsidiary of the Gulf Oil Corp. Production from these properties is more than 300,000 barrels a month.

Present production of more than 5,000 barrels of the Mexican Seaboard is excluded in its contract with the Standard whose subsidiary, Transcontinental Petroleum Co., has production of more than 7,000 barrels daily in Mexico.

Program for Natural Gasoline Meeting

TULSA, March 26.—The program committee of the Natural Gasoline Association of America is rapidly whipping into shape its program for the annual meeting in Tulsa May 22 and 23. Most of the subjects of special interest to gasoline manufacturers this year have been assigned.

"Theory and Practise of Rectification at Natural Gasoline Plants", is the subject of a paper to be given by L. S. Gregory, consulting engineer.

G. G. Oberfell, director of research for the Phillips Petroleum Co., is expected to bring forward the results of some of his studies in making finished motor fuels from natural gasoline in a paper on "Volatility of Natural Gasoline".

H. B. Bernard, vice-president of the Sinclair Oil & Gas Co. in charge of natural gasoline manufacture, will give a paper on "Gas Lift and Its Relationship to the Natural Gasoline Industry". The Sinclair company has done a great deal of gas lift work in Seminole the past year in connection with the operation of gasoline plants.

Dr. George G. Brown, of the University of Michigan, head of the research department of the association will make his annual progress report on investigations at the university laboratories which have been carried out under his direction.

Some member of the association from the California district will prepare a paper on the "Importance of Gas and Gasoline Analysis to the Natural Gasoline Industry".

T. G. Laney, research engineer for the Fisher Governor Co., will talk on the "Theory and Practise of Automatic Control".

"Methods of Marketing" will be discussed by W. T. Anderson, associate editor of the Oil & Gas Journal.

S. C. Carney of the Roxana Petroleum Corp. will present a paper on "Some Considerations Affecting the Butane Supply".

The association will hold a night session May 22, the opening day. The second day will be featured by two business sessions and the annual banquet while the manufacturers will make a field trip to Seminole May 24.

Refinery Planned for Big Lake

HOUSTON, March 24.—A 1000-barrel plant to be erected at Big Lake, Reagan county, will be operated by the Big Lake Refining Co., according to San Angelo advices quoting Roy McKee and E. B. McKee of Tulsa. Construction work is to be started immediately on a 20-acre site at the town of Big Lake, on the Kansas City, Mexico & Orient railroad.

An Outstanding Leader Retires

By Warren C. Platt, Editor

THE oil industry has had some outstanding personalities who have not just taken what they could from it but have brought something worthwhile to it. Such a person is L. V. Nicholas who retired last week from six years of association work.

Consider his achievement and some, at least, of the industry's recognition of it. Chief of the latter is that not long after he came into active association work he was one of the most criticized men in the industry.

A few months ago, after he had announced his determination to retire, he was again elected to the board of directors of the American Petroleum Institute by the other members of the board, they having unanimously voted to increase the membership by one that this honor might be bestowed upon him.

When he took charge of the old National Petroleum Marketers Association, he found it with small membership and practically no income. He built it into an association of many hundreds of members and with a big income. Then he organized the more active members into a national marketing organization under a national trade mark.

It was this that he left, the Independent Oil Men of America, with a membership, even after the weeding out process, far larger than the association he found and with a minimum income firmly established of considerably more than one hundred thousand dollars a year, with all bills paid and money in the bank.

Mr. Nicholas applied the modern idea of association work to the oil industry; that is so organize the members they can be of direct assistance to each other in the operation of their companies and particularly in the sale of their products. To this he added the idea of marketers protecting their source of supply by so handling their purchases that there will always be plenty of refineries in operation, preferably without owning any marketing stations to supply Independent marketers.

He gave a new definition to the word Independent. It used to mean those independent of any Standard Oil company. Mr. Nicholas has made it mean independent commercially, a truly separate unit in the oil business. From this definition he argued for a purely private business organization that would blanket the country with uniform products under a single trade mark and by means of a united advertising campaign. It was the stockholders of this private corporation who met at Chicago last week, not delegates to a convention.

Mr. Nicholas had his national merchandising idea well on its way to a national success, when he retired. The trade marks had been worked out, the standards of practice, the membership standards, much of the product standards, methods, in fact every thing in connection with the project was not only all worked out but in smooth and successful operation. And oil men everywhere had come and approved the ideas by their acceptance of them.

Mr. Nicholas argued that his services were not further needed, that the plans could be carried out by a staff under the supervision of the stockholders and directors and that he preferred to seek a rest from association, or semi-association work, by entering strictly private business. Association work at best is hard because it always is and must be of a political character. Some like to play politics but the average man does not. Neither does Mr. Nicholas.

After many warnings, Mr. Nicholas last fall announced his retirement from leadership effective this spring. His directors, after much arguing, finally took him at his word and after investigation of possibilities had Mr. Harrington ready to make managing director, as has been told elsewhere in this issue.

Mr. Nicholas used in his retiring the same high principles that he applied to the successful operation of his work. He argued that he should give the organization plenty of notice, but that he should not have any plans or offers for his own employment after retirement under consideration even, because they would not only be likely to take some of his thought and time away from his organization work but they might easily conflict with it.

So this writer can say definitely, from years of intimate friendship with the man, that he has not even permitted anyone to submit him an offer or talk to him about a job, or a new activity. Some months ago the writer had some ideas for his future and started to speak of them.

He was stopped at once with the request not to tell them until after he was out of office, and preferably not for several months thereafter as he wished at least that amount of time to rest and travel in.

There is no reason why the work which Mr. Nicholas has so well started and the plans which he has so thoroughly developed should not be carried on to one of the most outstanding merchandising successes in this country, a success far greater even than that of the much talked of California fruit growers and others of that type.

Such success will not only benefit in dollars largely and directly the men and companies who are partners in it, but it will be of vital value to the entire oil industry in strengthening and preserving a truly Independent portion of the industry, which will help all of the integrated companies by providing a competition which will compel the highest of efficiency in their organizations, but which above all will provide, so that all can see and value it, the intelligent competition in the oil industry which the public of this country seeks from all business.

It is and will be a real, outstanding monument to Mr. Nicholas's years of labor.

At Your Finger Tips—fo

[IMPORTANT Articles on All Phases of Petroleum Development Summarized.]

NATIONAL PETROLEUM NEWS announces a new service for its readers which includes these features:

1—Publishing regularly in its own columns, summaries or abstracts of its own articles having to do with new practice and new methods in all branches of the industry.

2—Publishing regularly, in its own columns, summaries of bulletins or articles by oil associations, or societies, having to do with important developments in any branch of the oil industry.

3—Publishing of a book indexing subjects dealing with oil developments, which gives the reader a quick guide to any summary or abstract published at any time in NATIONAL PETROLEUM NEWS.

The book sells for $1 and can be obtained only through NATIONAL PETROLEUM NEWS.

The summaries, as published in NATIONAL PETROLEUM NEWS, are indexed to correspond with the book and are printed so each can be clipped and pasted on a three-by-five-inch filing card.

Through this service, which is entirely new in business paper publishing, any reader, in five minutes a week, can keep up his own card index system to articles on petroleum developments in which he is interested. Or the office girl can keep it up for him. Or he can be away from his office for a month and come back and be up-to-date with his system with only a few moments work.

All there is for the reader to do is clip the abstracts in which he is interested, paste them on cards, and file the cards in numerical order according to their index numbers, either with a rubber band around them or in a more formal filing system.

When he wants to refer to his index on particular articles the Index Book will give him the key number by which he can locate them quickly.

An article in the book explains its use and the method of carrying on the indexing work in all detail.

Illustrations on this page show pages from the Index Book, also the form in which the summaries will be published in NATIONAL PETROLEUM NEWS. In clipping them from each issue the reader will not damage his copy for filing.

Form in which important articles of production, refining, natural gasoline manufacturing and marketing will be summarized in NATIONAL PETROLEUM NEWS. *The reader will cut out the abstracts which he wants to keep for further reference, paste them on a three-by-five inch card and file in the order of the index numbers.*

National Petroleum News, 961.12

"Profitable Gasoline and Oil Business Lies in Oil Company Stations" Issue March 7, 1928, p 17-19.

This article is based on an analysis of figures giving gasoline sales at 3227 stations in ten cities in this country presented by Alvin E. Dodd, manager, domestic distribution department, Chamber of Commerce of the United States. His figures were secured from the survey of retail distribution conducted in these cities by the chamber of commerce and the Bureau of Census, of the U. S. Department of Commerce. The figures are broken up into sales by oil company stations and individually owned stations, both for the ten cities as a group and for individual cities, showing that average oil company station sales are three times those of individually owned stations. The article points out that carrying sidelines at stations which are unprofitable from a gasoline standpoint does not help the station in most cases.

Sample portion of page from decimal classification covering refining practice, taken from Uren's Decimal Index of Petroleum Technology.

Cards with summaries of articles on these subjects, for example, are numbered to correspond with these index numbers. This provides for quick finding of cards on any subject desired.

734.3 to 759.2
- .3 .....Condensers.
- .4 .....Temperature measuring and recording devices.
- .5 .....Dephlegmators.
- .6 .....Vapor lines.
- .7 .....Gas traps.

735. ....Chemical treatment equipment.
- .1 .....Agitators.
- .2 .....Compressed air equipment for agitators.

736. ....Decolorizing equipment.
- .1 .....Filters.
- .2 .....Agitators.
- .3 .....Roasting furnaces for activating fuller's earth.
- .4 .....Conveying machinery for charging and excavating filters.

737. ....Wax plant equipment.
- .1 .....Refrigerating units.
- .2 .....Chillers.
- .3 .....Wax pans.
- .4 .....Sweat pans.

738. ....Blending and compounding equipment.

739. ....Other data on refinery construction, equipment and materials.
- .1 .....Storage of liquid refinery supplies and products.
- .11 .....Tanks. (See also under 640.)

740. **Refinery Operation and Control.**

741. ....Distillation practice.
- .1 .....Batch distilling systems.

for Five Minutes a Week

The Index Book, the official title to which is "Decimal Index of Petroleum Technology" has been prepared over eight years' time by L. C. Uren, head of the petroleum engineering department of the University of California. He is a regular contributor to NATIONAL PETROLEUM NEWS on production methods.

"Technology" may be a rather formal word to some readers. The dictionary says it means "the scientific knowledge of the industrial arts". As applied to the oil business it means methods of finding oil, producing it, refining it into its various products and selling them to the public.

What Mr. Uren has done is to compile an index of these subjects. It is articles on these same subjects that NATIONAL PETROLEUM NEWS will abstract or summarize, so that readers may have a quick reference to them after the number of NATIONAL PETROLEUM NEWS in which they appear is no longer the current issue.

This new abstracting and indexing service is of value to readers in all branches of the industry. The marketer will find his reference there to past articles in NATIONAL PETROLEUM NEWS and elsewhere on new merchandising methods, operation of station properties, business management and so on.

The producer will find the service a key to articles on new practices and equipment in locating fields, drilling wells, lease operation and other subjects having to do with his branch of the business.

The refiner will find it of great use in referring to back articles on new processes, plant operation, methods of testing and so on.

Great progress is being made now in developments in all branches of the oil business. Textbooks on any subject relating to oil are out of date almost before they are published.

It is more important than ever before for men actively engaged in the oil industry to keep in touch with current developments.

This abstracting and indexing service offers every reader an easy and valuable method for keeping track of articles in which he is interested after the current copy of NATIONAL PETROLEUM NEWS is filed away.

Publishing of the summaries of articles will start in the April 4 issue.

The Index Book costs $1.00. Get your copy at once by using the coupon below.

[NEW Abstracting and Indexing Service For National Petroleum News Readers.]

Sample portion of page taken from alphabetical index in Uren's Decimal Index to Petroleum Technology.

This is a list of subjects. The numbers refer to the numbers of cards carrying summaries of articles on that subject.

Cool to Distil Equip
Decline curve method of estimating future production of oil properties, 951.13.
Decolorizing equipment for oil refining, 736.
Decolorizing of oils, 726.
Deeds for free purchase of oil land, 382.
Deepening wells, 532.6.
Deformation of strata, influence of on quality of petroleum, 315.7.
Dehydration of petroleum, 546.
Demulsification processes in oil refining, 729.3.
Density of gases, measurement of, 685.
Density of petroleum and related products, 213.1.
Dephlegmators for use in oil distillation, 734.5.
Depletion accounting, 941.5.
Depreciation accounting, 941.4.
Depth-recording devices for use in oil gaging, 675.2.
Derricks for American Standard Cable drilling, 424.21.
Derricks for drilling purposes, 422.2.
Desulphurizing of oils, 724.
Detonating torpedoes in well shooting, 452.4.
Development of deposits of solid hydrocarbons, 460.
Development of mines, principles and methods of, 470.
Development of oil and gas deposits, 400.000.
Development of oil properties, future, estimating cost of, 951.21.
Development of the presentday petroleum industry, 991.2.
Development programme, planning the, 414.
Diamond drilling, 427.1.

National Petroleum News
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Cleveland, Ohio

Send me a copy of Uren's "Decimal Index of Petroleum Technology." Enclosed is $1.00.

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Bigger Profits for the Refiners in 1928

Building Small Plants on Pipe Line, One Way in which They May be Made a Reality

by Paul Truesdell, N. P. N. Staff Writer

Article 2

CLEVELAND, March 23

PERHAPS "decentralization", which Henry Ford foresees as one of the developments of industry in the future, is to become a fact in the refining business before it does in most others. Some indications seem to point that way.

When Mr. Rockefeller started the refining industry, his policy was to carry on a refining and market business only. He built his refinery in a large consuming center, distributed his product by comparatively short rail haul and bought his crude oil from the producer in the field and transported it to the refinery by pipe line.

When the Independents saw the possibilities for them in the newly developing oil fields of Oklahoma, Kansas and Texas and set up as refiners, they adopted a policy exactly opposite to that pursued by the Standard Oil Co.

They built their refineries close to the source of the crude and shipped their products by tank car to centers of consumption. The cost of shipping finished products by rail is greater than the cost of shipping raw or partly finished materials by pipe line. Therefore, the Independents have always been kept on their mettle to meet the competition of the Standard companies in the various territories, which means mostly to sell to the Independent jobbers at a price which would permit them to compete with the Standard in the retail field.

Within the last few years a new transportation factor has been assuming increasingly greater importance in the oil industry, the tank steamer. Transportation of crude or refined products by tanker is far cheaper than any other form of bulk shipment known. When crude oil can be loaded into a tanker at a tidewater terminal and delivered at a seaboard refinery, it can be transported for an enormous distance, made up into finished products and distributed to considerable distances by tank car, and still undersell products made from crude transported but half the distance by pipe line.

California crude was brought by tanker around to east coast refineries in floods for years, refined and its products distributed as far back from the Atlantic seaboard as Buffalo, Pittsburgh, and even Cleveland, to under sell the products made from Mid-Continent crude transported east by pipe line. Now large amounts of crude from Texas ports are shipped to Atlantic coast plants.

Three major recent developments are apparent to every body. These are:

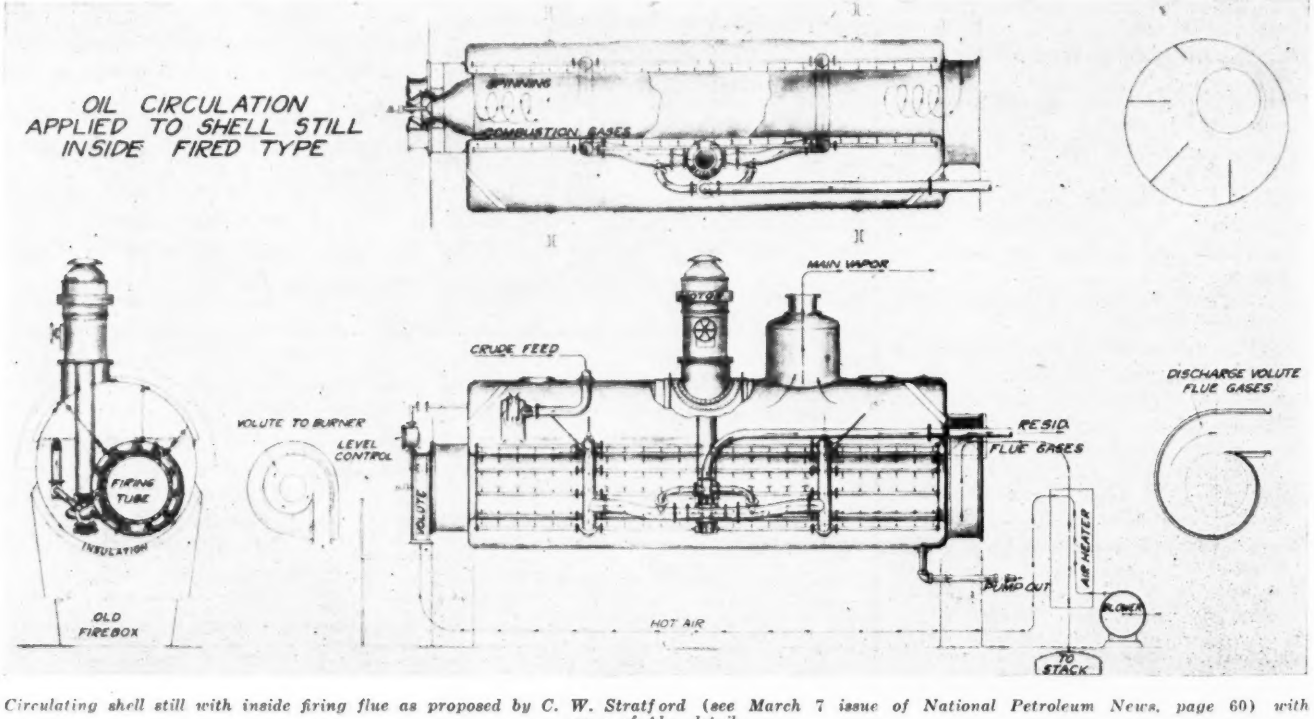
1—Development of foreign fields, particularly in South America, from which crude can be laid down at eastern and Gulf seaboard refineries by tank steamer, and development of the California fields to great volume production.

2—Consequent backing up of crude from inland fields in the United States because of the impossibility of moving it to the big refineries, even by pipe line, in many cases, in competition with water borne crude.

3—The increasing inroads into the refiners' profits by freight rates on finished products, as refiners sought to extend their markets by shipping longer distances from their refinery.

As pointed out in Article 1 of this series, in the March 14 issue of NATIONAL PETROLEUM NEWS, page 42, refiners generally are alive to the changed conditions and are trimming their sails and readjusting their policies to meet them.

While a number of mergers have been consummated the past few months, it appears that size is by no means the only or the whole an-



Circulating shell still with inside firing flue as proposed by C. W. Stratford (see March 7 issue of National Petroleum News, page 60) with some of the details

swer to the problem. Some of the largest and best managed of oil companies lost money during 1927 and others made much smaller profits than the preceding year.

One way that will be taken by some companies to better their chances of profit earning is the construction of new refineries.

It seems paradoxical, perhaps, to make such a prediction in view of the fact that one of the ills that afflicts the industry is that there is more refinery capacity now than the market can absorb.

However, the building of new refineries is going on now. There are four possible major reasons for this,

1—To reduce the overall cost of delivering products into the hands of the ultimate consumer, and put into the refiner's pocket part of the cash now going to the railroads.

2—To get away from a labor situation in centers of population that in some cases has become almost intolerable, but which cannot be changed while refineries remain where they are.

3—To make it possible to handle crude from fields to which it is impractical to build pipe lines and from which it is uneconomical to haul crude by tank car.

4—To work up into finished products, on the spot, crude that cannot be piped to a far distant refinery and compete with crude brought in by tanker.

SOME companies which have built within the past year or are now building refineries, mostly of small or moderate capacity are:

Humble Oil & Refining Co., (Standard Oil Co. of New Jersey)

Pasotex Refining Co., (Standard of California)

Standard of Indiana

Shell of California

New Orleans Refining Co. (practically a new refinery).

In addition to these, the Roxana Petroleum Corp. has bought a site for a refinery on the Houston Ship Channel on which it is said to be about ready to build. The refinery executive of another big company is making a hard fight to get authority from his board of directors to build a refinery somewhere in the middle west, on the Mississippi River, transporting the crude to it by pipe line and greatly shortening the haul of the finished products.

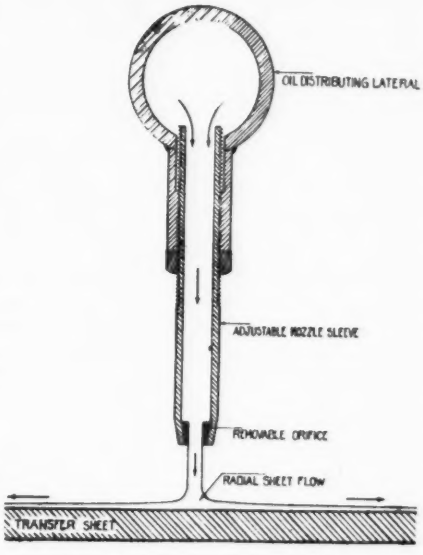
The Standard of Indiana, in addition to building a small refinery near Saginaw, Mich., to handle the crude from a local field, is considering, if it has not already started to build, a very large refinery in Venezuela.

What type of construction and what sort of equipment will be used in the refineries to be built this year?

Probably this will depend upon conditions under which the individual plants will operate, what crude they will use, and on what developments are made in refinery equipment design during the year.

However, it is likely they will lean toward the portable or semi-portable type of construction as much as possible, because undoubtedly many of them will be built with the expectation that their source of supply or their period of usefulness is limited.

While the modern pipe still-fractionating unit seems a rather ponderous and complex piece of work it is really simple and it is a question whether such units could not just as easily be built in sections and bolted together, so that they could be disassembled into pieces that would ride on a flat car, clearing bridges and so on. In that event salvage would be approximately 100 per cent.



ASSEMBLY-OIL CIRCULATION NOZZLE

One of the nozzles used by C. W. Stratford in circulating shell still showing how thin sheet of oil is distributed over fire sheet of still

A WELL known refiner told the writer not long ago that the towers on two of his crude distilling units—one of them nearly 90 feet high, could easily have been built so they could be knocked down for shipment to some other location.

Considerable interest in connection with small refineries attaches to the shell still high velocity distillation unit described by C. W. Stratford at the A.I.M.E. meeting in New York. At least one important refinery executive got busy immediately after he heard the paper studying as to whether the Stratford still, particularly the one which Stratford proposed to fire internally in a central flue, would be adaptable to the building of a small refinery.

It seems likely that one or more fairly standardized types of refineries will be developed to meet the new need.

The Standard of New Jersey has gone further than any other company in the building of small refineries during the past year. Through its subsidiary, the Humble Oil & Refining Co. it has built four plants and is about to build a fifth. As before stated, it is the policy of the Standard of New Jersey in the future to restrict its refining operations on the Jersey coast, particularly at the Bayway plant, and increase them on the Gulf coast, either through the enlargement of the present plants of the Humble, through the construction of new plants, or both. Additions to the refining capacity of the Standard of Louisiana, another subsidiary, may also figure in this program.

IT IS understood that the Standard, on account of labor union conditions, is cutting down its forces at Bayonne and Bayway to strictly operating and maintenance men; that it will handle no new construction work at all. Conditions on the Gulf coast are much more favorable from the labor standpoint.

It is understood that nearly 50,000 barrels a day of crude oil that has been going by pipe line from the Mid-Continent to the Atlantic coast, has already been turned south to the Gulf.

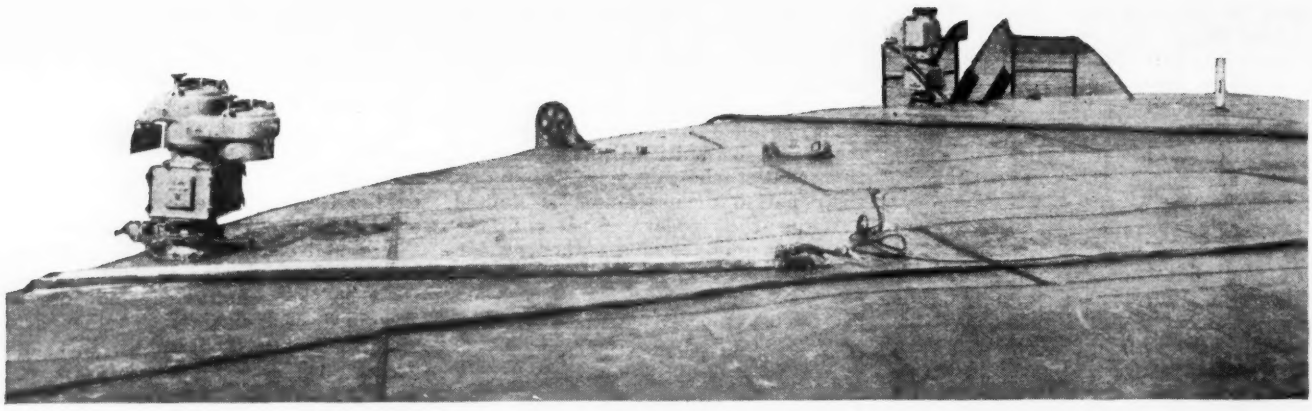
And while the Humble has been building five new refineries (including the one planned) it has abandoned two refineries as uneconomical because of their location or for other reasons. These were skimming plants at Burkburnett and Hearne, Tex., with respective capacities of 10,000 barrels and 3600 barrels of crude a day. The plants that were built have capacity of 5000 to 10,000 barrels a day, being mostly closer to the latter figure.

The plants the Humble has recently built are all in Texas; at Breckenridge, near Waco, near San Antonio, at McCamey and it is planning to build one near Corpus Christi. All are located either on the main pipe line running from the west Texas fields to the company's big refinery at Baytown, or are within easy reach of it and draw their crude supply from the main line through a short branch line.

I have seen one of these plants. It is the latest to be completed, having started operating Jan. 28, 1928.

This refinery stands out in the middle of a pasture, along the railroad track about 14 miles from San Antonio.

It consists of one 12 by 30-foot still, with a small bubble tower mounted directly on top. The tower is 9 by 26 feet. The still is of the internal flue type much used by the Humble, having about 30 4-inch flues installed in the bottom half of the still. Firing is by oil and gas. Combustion takes place in the furnace under the still, the combustion gases travel the length of the setting in contact with the fire sheet and then



Roof of a modern 80,000-barrel tank equipped to avoid fire and evaporation loss. Note flame arrestor and conservation vent valves as well as gastight manhole, gauge hatch and sheave bracket. As showing the saving possible through using gastight roofs and modern fittings the engineer in charge of tests for a big oil company recently reported that tests he had made on two tanks containing 60-62 A. P. I. gravity gasoline, one with gastight and vented roof and the other equipped with the old style screened T showed a saving of about $10 a day on the former as against the latter, or about $3600 a year, this being the return on an investment of about $129. The tank in the test had the ordinary roof, capable of withstanding one-half ounce, not the strong roof on which the vent can be set to open at half a pound pressure

travel to the breeching and stack at the front of the still through the internal flues. Thus the heating surface is more than doubled.

The unit operates continuously, having a capacity of about 5000 barrels a day of crude. The crude is pumped in continuously countercurrent to the residum being pumped out, the heat interchange being effected in a battery of seven Griscom-Russell shell and tube heat exchangers. The crude, after passing through the heat exchangers, enters the still at about 320 degrees F. The still temperature runs about 595 degrees F. The charging stock is Crane-Upton crude, one of the worst in hydrogen sulfide content of any of the west Texas oils.

The temperature at the top of the fractionating tower is maintained at about 300 degrees F. The vapors pass from the still direct to a condenser which is a Braun, louver type atmospheric water cooling tower and thence into a liquid and gas separator. From the separator the fixed gas is returned to the furnace, while the gasoline passes to the receiving drum, which is maintained under 10 pounds pressure This pressure forces the gasoline from the receiving drum to storage without the necessity of a pump.

The plant has horizontal gastight gasoline receiving tanks which are held under pressure. The refinery includes a continuous gasoline treating plant of the latest type with upright acid, caustic and washing tanks and horizontal settling tanks. Inasmuch as the climate is warm and dry, no building is erected over the pumps and other equipment of the treating plant. This is to minimize the danger to men of asphyxiation by concentrations of hydrogen sulfide gas which would tend to collect in the corners of a building.

The gasoline storage tanks are connected with an 18,000-cubic foot breather balloon similar to those used by the Standard of Indiana and described in NATIONAL PETROLEUM NEWS, pages 21, June 3, 1925 issue.

The plant has a boiler house containing one return tubular boiler and one of the cross drum marine type. Both are old boilers removed from some other plant.

The purpose of the plant at San Antonio is primarily to top west Texas crude, to make fuel oil for delivery to the railroad on contract. The small amount of gasoline will be distributed to nearby jobbers by truck, the Humble having no retail stations in that immediate territory.

The McCamey skimming plant also was built for a similar purpose. It delivers fuel oil to the Southern Pacific railroad at Alpine, Tex. The Humble has a large volume of fuel oil contracted to various railroads.

An interesting possibility is that where such plants are established and there is no ready local outlet for their fuel oil, the crude may be taken out of the pipe line, skimmed, and the residue turned back into the pipe line and run on down to the big plant for cracking, lubricant manufacture or other further processing.

Whether the Standard of New Jersey proposes to standardize on the type of refinery described for small plants for special locations and purposes is not known. It seems to be well adapted to such use at any rate. There seems to be nothing in the plant that could not be readily moved to another location either on flat cars or trucks.

It seems likely that the building of such plants, at least similar in principle and purpose, is likely to become rather common. Of course, this will apply only to those companies, as a rule, that have seaboard terminal plants of large capacity where residue from the small skimming plants can be run down to its ultimate products.

It is conceivable that, under certain conditions, it might even be practical to build small cracking plants, either liquid or vapor phase, in consuming centers on the pipe line, as well as skimming units.

Of course, the building of a modern refinery with good fractionating towers to handle a small amount of crude per day makes a small divisor of the operating cost and hence a high overhead, nevertheless it seems that the economy of such a course depends entirely upon the money that can be saved in delivering the products to the customer. This in turn depends upon how great the consuming demand for such products is in the territory easily reached from the refinery and what share of this business the company can reasonably expect to get.

Two Oil Laws Passed By Congress

WASHINGTON, March 24.—Two bills of interest to the oil industry have gone through the legislative mill and have been signed by President Coolidge. They are the first at this session of congress.

The first is H. R. 5783 (public law 118) granting extensions of oil and gas permits.

The second is S. 1959 (public law 76) transferring jurisdiction over the naval petroleum reserve leases to the Secretary of the Navy. This law refers to leases in the naval reserves granted under the national leasing law of Feb. 25, 1920. Under the terms of that leasing law jurisdiction over leases, no matter where the lands might be located, is vested in the Secretary of the Interior.

The law pertaining to the extension of time relates to oil and gas permits issued under the national leasing act. Extensions of such permits have been authorized under acts passed in 1922 and 1926, but the need for still further extensions has been represented as being as great now, especially on account of the vast production of crude that has taken place in the last seven or eight years.

The new law authorizes extensions of permits that have not yet expired for two years, or such periods as the Secretary of the Interior may deem necessary.

Developments in Geological Research Shown in Convention Program

By L. C. Uren

Professor of Petroleum Engineering, University of California

SAN FRANCISCO, March 23 NEARLY 300 members of the American Association of Petroleum Geologists from various sections of the United States gathered in San Francisco, during the three days ending March 22, for their eleventh annual meeting.

Though the attendance was considerably smaller than at other recent meetings, due to the fact that it was held at a point somewhat remote from the geographic center of membership, the program, entertainment and facilities provided left nothing to be desired. Convention headquarters were at the Clift Hotel, which provided rooms for committee meetings and small groups, general sessions being held in the nearby Native Sons' Hall.

The Society of Economic Paleontologists and Mineralogists, membership of which is comprised largely of individuals who are also members of the geologists' association, held its meeting concurrently on the second of the three-day session, presenting a well-balanced program of papers and participated in by many of the best known authorities within this specialized field.

High lights of the convention, outside of the usual technical sessions, included an address of welcome by Mark L. Requa, veteran California oil operator and Fuel Oil Administrator during the war; a review of recent progress in research of interest to petroleum geologists by Mr. K. C. Heald, staff geologist, Gulf Companies, Pittsburgh and a dinner dance at the Fairmont Hotel which was attended by 400 members and their guests.

Mr. Requa, in his address of welcome, sketched the progress that has recently been made in petroleum conservation through the adoption of improved production and refining methods which have been secured largely through the efforts of the technical men of the industry. He stressed the urgent need for further progress in conservation, preferably along the lines of voluntary cooperative exploitation of oil fields, rather than by enforced govermental control.

New Officers Elected

Officers elected to administer the affairs of the American Association of Petroleum Geologists during its next year are as follows:

President, R. S. McFarland, chief geologist of the Twin State Oil Co., a Sun Oil Co. subsidiary, Tulsa. First vice-president, J. E. Elliott, Elliott Core Barrel Co., Los Angeles. Second vice-president, (finance), D. Donaghue, land and geological director, Texas Pacific Coal & Oil Co., Fort Worth. Third vice-president, (publications), J. L. Rich, consulting geologist, Ottawa, Kansas.

The Society of Economic Paleontologists and Mineralogists elected the following officers for the coming year:

President, Raymond C. Moore, state geologist, Lawrence, Kansas. Vice-president, G. D. Hanna, California Academy of Science, San Francisco. Secretary-treasurer, F. B. Plummer, consulting geologist, Fort Worth. Editor of the Journal of Paleontology, J. A. Cushman, head of Cushman, Research Laboratories, Sharon, Massachusetts.

New Orleans extended an official invitation to the association to hold the next annual meeting in that city, but the place will not be determined for a month or more, during which time the executive officers will canvas the opinion of the members.

Petroleum Geology Research

Mr. Heald, who is chairman of the association's committee on research and also a member of the special committee of the National Research Council appointed to administer the American Petroleum Institute's research funds, sketched the progress made during the last year in the various geological research projects supported by this fund.

He also took occasion to refute certain criticism that has recently been leveled at the character of projects included in the A.P.I. program, pointing out the necessity of concentrating the available funds on problems of a fundamental nature, solution of which will provide the foundation for a better understanding of the more "practical" problems.

A group of A.A.P.G. members interested in petroleum geology research, spent the entire day preceding the general sessions in discussing results attained during the past year in the American Petroleum Institute research program, in an effort to secure representative opinion as to which of the various projects warranted continued support. Several new projects were also suggested and discussed. This conference was presided over by Mr. Heald.

Geology of the California Fields

Several papers in the technical program were included primarily to acquaint visiting members with the more important informational facts that would give them a better appreciation of conditions in the California fields, which were to be inspected in post-convention trips.

One of these by Austin Cadle, presented an economic review of the petroleum industry in California during 1927, together with a brief description of the important production and geologic features of the recently discovered and developed fields.

Another paper by Joseph Jensen and G. D. Robertson discussed recent developments in the Los Angeles Basin fields, pointing out the importance of faulting in confusing structure. The authors also brought out the interesting fact that oil is now being produced from Miocene formations in this region, though it has formerly been generally believed that only Pliocene formations would be found productive.

Mr. Jensen stated that the expectancy of discovery of new fields in the Los Angeles Basin is less now than at any time during the last five years, but that prospects were excellent for deeper discoveries in many of the present known fields.

Two papers of special interest described conditions in the Ventura Avenue and Seal Beach fields of California, both of which are at present accounting for a substantial part of California's flush production. The paper on the Ventura Avenue field, by F. W. Hertel, presented an excellent description of the geologic features surrounding this area, which contains the world's deepest producing oil well at 7200 feet, producing from an oil zone of phenomenal thickness.

The lower Lloyd Zone in this field has a known thickness of 3600 feet and has not yet been penetrated by any of the producing wells. Ultimate recoveries in certain portions of this field will probably be as great as 375,000 barrels per acre.

R. M. Barnes and W. W. Copp's paper on "The Geology of the Seal Beach Field" was of especial interest in that it presented new and authoritative data on a field only a year and a half old, of which but little

detailed information had been previously available. The paper was illustrated by excellent geologic maps and sections.

Several papers were also offered descriptive of the stratigraphic and general geologic features of various regions in California adjacent to existing or prospective oil regions. One of these, by Ralph Arnold and Wayne Loel, on "The Geology of the La Panza Quadrangle, San Louis Obispo County, California", is a notable contribution to our knowledge of Coast Range geology, and was ably presented and discussed by Mr. Loel with the aid of many excellent aerial photographs of the region.

Another useful paper in this group was one by H. W. Hoots descriptive of the "Santa Monica Mountains, a Major Anticlinal Uplift Adjoining Los Angeles Basin". "The Monterey Shale", supposed to be the source of a large part of the petroleum produced in the California fields, was described by G. D. Hanna, who is one of the outstanding paleontological authorities on this particular horizon of Pacific Coast geology.

Faulting and Tectonics

Though scattered through several of the technical sessions on the program, a number of papers on faulting and tectonics provided an interesting symposium on these complex disturbing factors in geologic interpretation.

B. L. Clark, of the University of California, presented an able paper on the "Tectonics of the Valley Grande of California", and L. S. Fox discussed "Some Structural Features of the East Side of the San Joaquin Valley".

T. A. Link of Calgary, Alberta, presented the results of some interesting and novel experiments in a paper entitled, "The Relationship between Over and Under-Thrusting". It was shown that faulting is the result of earth movements which result in both over and under-thrust displacements, the two types of faults being formed approximately in the ratio of 2 to 1.

Mr. H. Johnson, of Los Angeles, presented a paper not scheduled on the program, giving the results of a geologic inspection of the locality surrounding the Saint Francis dam in Ventura County. This is the dam which recently failed, causing a disastrous flood and the loss of several hundred lives.

Mr. Johnson's data developed the fact that the dam was built across a well-defined fault line, and examination of one of the fragments of the concrete structure indicated that the concrete mass had parted almost directly over the clay gouge marking the position of the fault plane. Mr. Johnson also made a strong plea for more extensive geologic study of both existing and future dam sites, in order that such structures may not be used or built where earth movements are likely to occur.

Several papers were offered dealing with various aspects of petroleum origin, migration and accumulation. John L. Rich presented a paper entitled "Notes on the Origin and Migration of Oil". A paper by R. C. Beckstrom and F. M. Van Tuyl entitled "Compaction as a Cause of Migration of Petroleum", described experiments in which clays saturated with water and oil were subjected to pressures ranging as high as 100,000 pounds per square inch in specially constructed apparatus, the solids being so compacted in some instances as to expel 99 per cent of the contained liquids.

Mr. Van Tuyl and Q. D. Singewald presented a paper discussing "The Role of Bacteria in the Formation of Dark Sediments", in which it was reported that certain bacteria have the power of decomposing both plant and animal matter in saline waters into a finely divided, dark substance, the composition of which has not as yet been determined. It is believed that this process plays an important part in the formation of organic shales.

In another paper discussing results obtained from experiments conducted at the Colorado School of Mines, entitled "Notes on the Sedimentary Deposition of Petroleum", Mr. Van Tuyl and C. F. Barb described the effects secured by sifting finely powdered, dry sediments on films of oil floating on water. The oil is absorbed by the dry solid and carried to the bottom of the container. It is suggested that some such process may occur in nature, where volcanic ash and dust are deposited on water carrying films of oily organic material.

A. J. Tieje presented a paper describing "An Ancient Shore-Line and its Bearing on the Failure of an Oil Well", in which the influence of the shorelines on accumulation of oil was discussed, and an instance cited where a large sum of money might have been saved in the drilling of a dry well had a competent geologic study been made of the nearby shoreline. A paper entitled "Diatoms as a Source of Oil", by C. F. Tolman, T. Hashimoto and L. A. Thayer, to which many had looked forward to with interest, was read only by title in the absence of the authors.

Mid-Continent Oil Geology

A number of papers were presented dealing with various aspects of Mid-Continent oil geology. A paper by O. R. Grawe entitled "The Stratigraphy and Structure of the Cromwell Oil Field, Oklahoma," gave the results of an extensive regional and stratigraphic study. Two others entitled "Notes on the Stratigraphy of the Weatherford Area, Oklahoma", by N. Evans, and "Notes on Permian Sedimentation on Correlation", by E. C. Edwards, will be found of interest to geologists engaged in detailed work in the Mid-Continent area.

A number of other unrelated papers in the program are worthy of special mention, among these Stanley Herold's paper on "Jamin Action", which discussed the mechanics of motion of a series of alternating globules of liquid and bubbles of gas in channels of capillary dimensions, a condition believed to exist in most productive oil sands.

A paper entitled "The Use of Aeroplane Photographs in Geologic Work," by W. A. English, was illustrated with a number of excellent aerial photographs which were interpreted by the author. The value of such photographs as an aid to the geologist in areal studies was emphasized. A paper by J. G. Bartram and J. E. Hupp, entitled "The Subsurface Structure of Some Unsymmetrical Anticlines in the Rocky Mountains" demonstrated how, in many cases, wells must be drilled at some distance from the apparent structural crest to penetrate the oil-bearing portion of the structure at depth.

A paper by C. L. Baker and M. Vetter reviewed "Texas-Louisiana Gulf Coast Operations for 1927". A paper entitled "Ceramics Applied to Petroleum Geology" was presented by E. Beck. Several other papers were presented by title only, in the absence of the authors. These were: "Limestones and Dolomites as Reservoir Rocks", by W. V. Howard, "Comparative Results from the Use of Graphic and Loss-Ratio Methods of Extrapolating Oil-Well Curves", by R. H. Johnson and A. L. Bollens; "The Position of Structure Among the Criteria for Oil Occurrence", by F. G. Clapp, and "Technical Papers and their Presentation", by A. Knapp.

Paleontologists' Program

A group of 15 papers comprised the program of the Society of Economic Paleontologists and Mineralogists, which was held concurrently with the meeting of the A.A.P.G.

* * *

Geologists Play Golf
(By Telegraph)

LOS ANGELES, March 26.—Don Danvers, Corsicana, Texas, walked away with the high score at the Golf Tournament held near Los Angeles, March 25 for visiting geologists who arrived March 24 from San Francisco after attending the annual convention of the American Petroleum Geologists' Assoc.

Mr. Danvers gets his name on the Bostick trophy, with a score of 87, with a handicap of 19. The non-member cup went to W. P. Winham, Bakersfield, of The Standard Oil of California. About 30 players took part.

Visiting geologists and their families were taken for a tour of southern California oil fields the day they arrived and served lunch at Palos Verdes. Many left for their homes in the east Sunday, although a few remained over for more of a visit in southern California.

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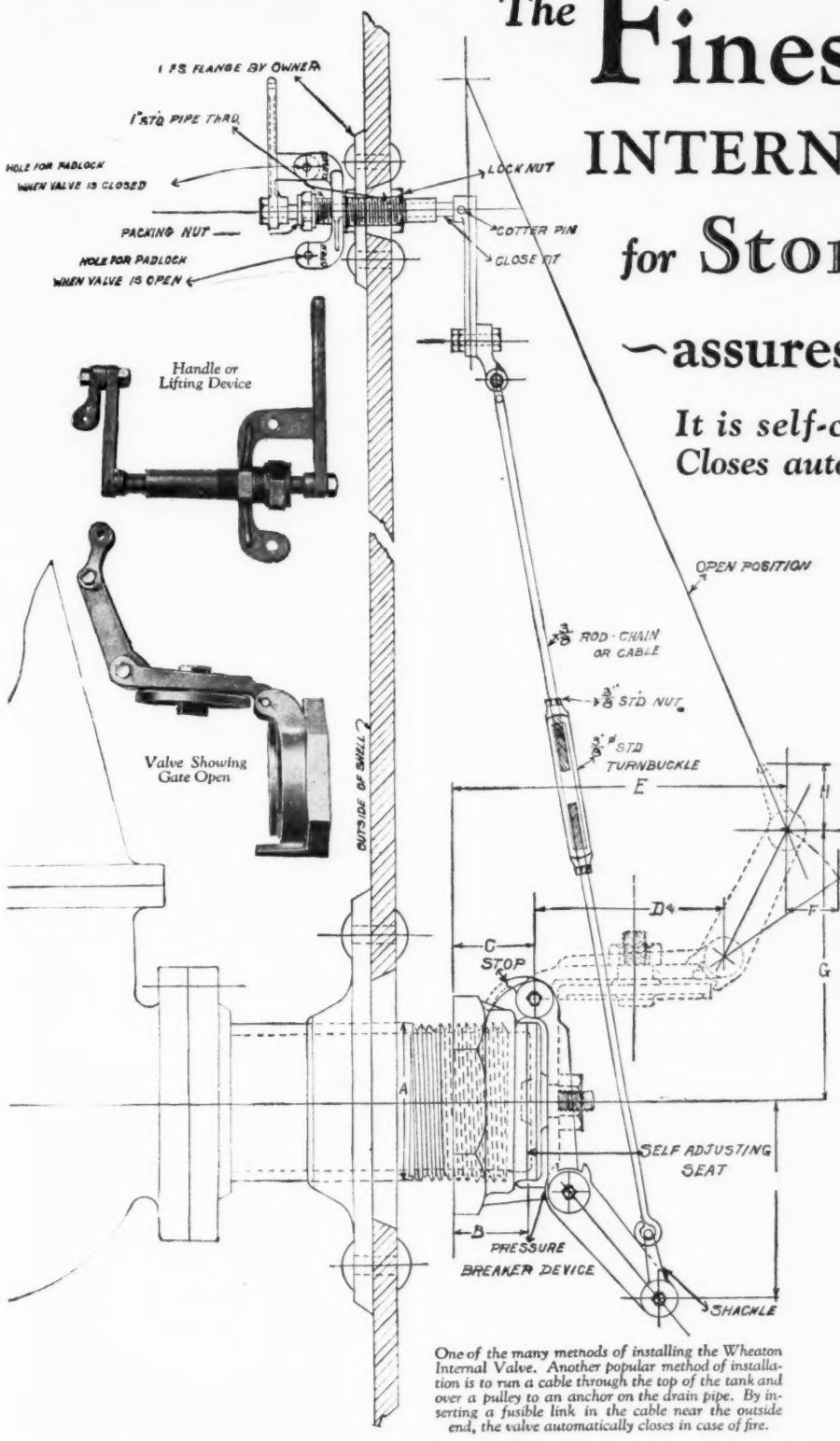

One of the many methods of installing the Wheaton Internal Valve. Another popular method of installation is to run a cable through the top of the tank and over a pulley to an anchor on the drain pipe. By inserting a fusible link in the cable near the outside end, the valve automatically closes in case of fire.

THIS Wheaton Internal Valve represents the most advanced development in safety valve design and manufacture. It is absolutely dependable.

As is obvious from the accompanying illustrations, the flow of the liquid closes the valve gate when released; and the perfectly true smooth surface of the rim of the gate, closing against the equally true smooth surface of the flange of the body, makes a leak-proof seal. In opening the valve the seal is "broken" by the cam-like pressure breaker—no sticking, no stress, no strain, no friction.

The drawing at the left shows one of the many methods of installation. The Wheaton Internal Valve can be used on any tank of any height, and in any position or angle desired—vertically, horizontally or obliquely. And the handle device can be located at any height on the wall of the tank or on the top.

By use of a fusible link fitting, the Valve closes automatically in case of fire near the tank. This gives further protection for users of Wheaton Internal Valves.

Protect your stocks from wastage and dangers due to carelessness and imperfect devices. Use Wheaton Internal Valves—they are Wheaton *quality* in every respect. Sizes: 2", 2½", 3", 4", 6", 8" and 10". Order a sample for your own test—returnable for credit or refund.

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Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended March 23 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Mar. 23	Total Week Ended Feb. 24
Plants Reporting	12	28	27	12	79	79
Crude Capacity (bbls.)	92,000	157,200	104,500	54,900	408,600	408,600
Cracking Capacity	30,700	52,600	16,200	22,700	122,200	122,200
Da. Av. Crude Runs	57,847 — 3.0	115,425 + 4.1	71,977 — 0.1	44,805 — 5.3	290,054 + 0.1	276,049
Da. Av. Other Oils	8,219 + 2.9	3,769	5,114 — 2.3	1,477 +269.3	18,579 + 42.2	17,000
GASOLINE—Gallons						
Stocks, Mar. 16	15,196,000	56,194,000	23,358,000	4,832,000	99,580,000	89,311,000
Prod. 3-16 to 3-23	9,011,000 — 2.1	18,500,000 + 9.3	8,104,000 — 1.8	4,004,000 — 5.2	39,619,000 + 2.6	36,578,000
Ship. 3-16 to 3-23	8,594,000 — 3.9	16,271,000 + 2.7	7,817,000 + 4.8	4,125,000 + 4.1	36,807,000 + 1.7	33,301,000
Stocks, Mar. 23	15,613,000 + 2.7	58,423,000 + 4.0	23,645,000 + 1.2	4,711,000 — 2.5	102,392,000 + 2.8	92,588,000
Ratio Sales to Prod.	95.4%	88.0%	96.5%	103.0%	92.9%	91.0%
KEROSENE—Gallons						
Stocks, Mar. 16	2,748,000	6,462,000	1,969,000	651,000	11,830,000	12,798,000
Prod. 3-16 to 3-23	1,552,000 — 10.3	3,350,000 + 6.8	1,525,000 + 2.6	330,000 — 24.0	6,752,000 — 0.5	6,276,000
Ship. 3-16 to 3-23	1,282,000 — 19.6	3,272,000 — 1.4	1,781,000 + 6.4	461,000 — 21.3	6,796,000 — 5.3	6,313,000
Stocks, Mar. 23	3,018,000 + 9.8	6,540,000 + 1.2	1,713,000 — 13.0	520,000 — 20.1	11,791,000 — 0.3	12,761,000
Ratio Sales to Prod.	82.6%	97.7%	116.8%	139.7%	100.6%	100.6%
STOVE DISTILLATE—Gallons						
Stocks, Mar. 16	977,000	3,049,000	1,231,000	70,000	5,327,000	5,078,000
Prod. 3-16 to 3-23	350,000 — 11.4	541,000 + 5.3	294,000 — 16.2	112,000 — 5.9	1,297,000 — 5.9	1,449,000
Ship. 3-16 to 3-23	302,000 + 16.2	829,000 — 16.9	268,000 + 94.2	118,000 — 11.9	1,517,000 — 0.8	1,525,000
Stocks, Mar. 23	1,025,000 + 4.9	2,761,000 — 9.4	1,257,000 + 2.1	64,000 — 8.6	5,107,000 — 4.1	5,002,000
Ratio Sales to Prod.	86.3%	153.2%	91.2%	105.4%	117.0%	105.2%
GAS OIL—Gallons						
Stocks, Mar. 16	6,227,000	32,266,000	9,865,000	6,277,000	54,635,000	59,313,000
Prod. 3-16 to 3-23	1,513,000 — 8.2	2,380,000 + 48.8	824,000 — 24.5	1,938,000 + 15.4	6,655,000 + 10.5	6,253,000
Ship. 3-16 to 3-23	2,239,000 + 2.8	1,203,000 — 24.7	2,261,000 + 93.6	2,223,000 + 37.0	7,926,000 + 27.0	5,123,000
Stocks, Mar. 23	5,501,000 — 11.7	33,443,000 + 3.6	8,428,000 — 14.6	5,922,000 — 4.5	53,364,000 — 2.3	60,443,000
Ratio Sales to Prod.	148.0%	50.5%	274.4%	114.7%	119.1%	81.9%
FUEL OIL—Gallons						
Stocks, Mar. 16	10,997,000	27,820,000	38,465,000	15,592,000	92,865,000	93,366,000
Prod. 3-16 to 3-23	6,545,000 — 4.2	7,294,000 — 7.2	9,744,000 — 0.3	6,122,000 — 11.1	29,705,000 — 5.3	29,906,000
Ship. 3-16 to 3-23	5,627,000 — 13.7	7,151,000 + 2.7	9,032,000 — 6.9	5,004,000 — 38.1	26,814,000 — 14.3	32,893,000
Stocks, Mar. 23	11,915,000 + 8.3	27,963,000 + 0.5	39,168,000 + 1.9	16,710,000 + 7.2	95,756,000 + 3.1	90,379,000
Ratio Sales to Prod.	86.0%	98.0%	92.7%	81.7%	90.3%	110.0%

Gasoline Produced by Various Methods, Week Ended March 23

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	5,365,000	59.9	14,254,000	77.0	6,328,000	78.1	1,594,000	39.8	27,541,000	69.5
Cracked	2,816,000	31.3	3,219,000	17.4	1,527,000	18.8	1,767,000	44.1	9,329,000	23.6
Natural	830,000	9.2	1,027,000	5.6	249,000	3.1	643,000	16.1	2,749,000	6.9
Total	9,011,000		18,500,000		8,104,000		4,004,000		39,619,000	

+ or — columns are % changed from previous week.

Gasoline Shipments Increase; Stocks Also Gain

Staff Special—By Telegraph
TULSA, March 27

GASOLINE stocks at 79 Mid-Continent refineries increased 2,812,000 gallons in the week ended March 23, pushing the total above 100,000,000 gallons for the first time this year. Stocks March 23 were 102,393,000 gallons or 19 days' supply at the current rate of shipments. Last year the same plants brought their gasoline stocks above 100,000,000 gallons Feb. 25 and the third week of March had 108,515,000 gallons on hand which was nearly 23 days' supply at the rate of shipment then current.

Shipments of gasoline last week reached a new high for this year, totaling 36,807,000 gallons, an increase of 600,000 gallons or 1.7 per cent over shipments the previous week. Shipments totaled 33,472,000

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended March 23. Change in stocks figured from Feb. 24.

GASOLINE

	Gallons
Production	150,049,000
Shipments	140,245,000
Net change in stocks	+ 9,804,000
Ratio sales to production	93.5%

KEROSENE

	Gallons
Production	26,333,000
Shipments	27,303,000
Net change in stocks	— 970,000
Ratio sales to production	103.7%

STOVE DISTILLATE

	Gallons
Production	5,505,000
Shipments	5,400,000
Net change in stocks	+ 105,000
Ratio sales to production	98.1%

GAS OIL

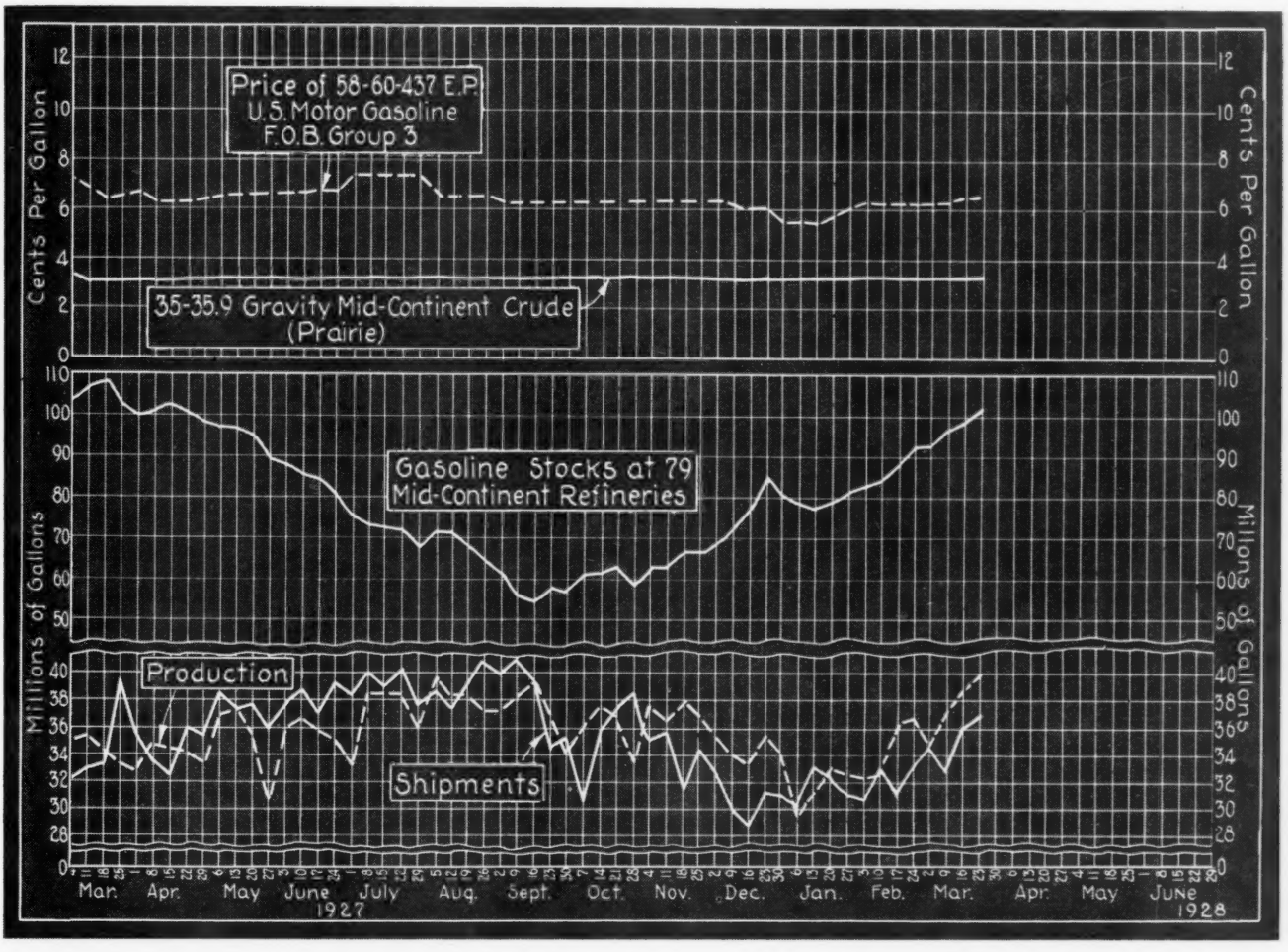
	Gallons
Production	27,364,000
Shipments	34,443,000
Net change in stocks	— 7,079,000
Ratio sales to production	125.9%

FUEL OIL

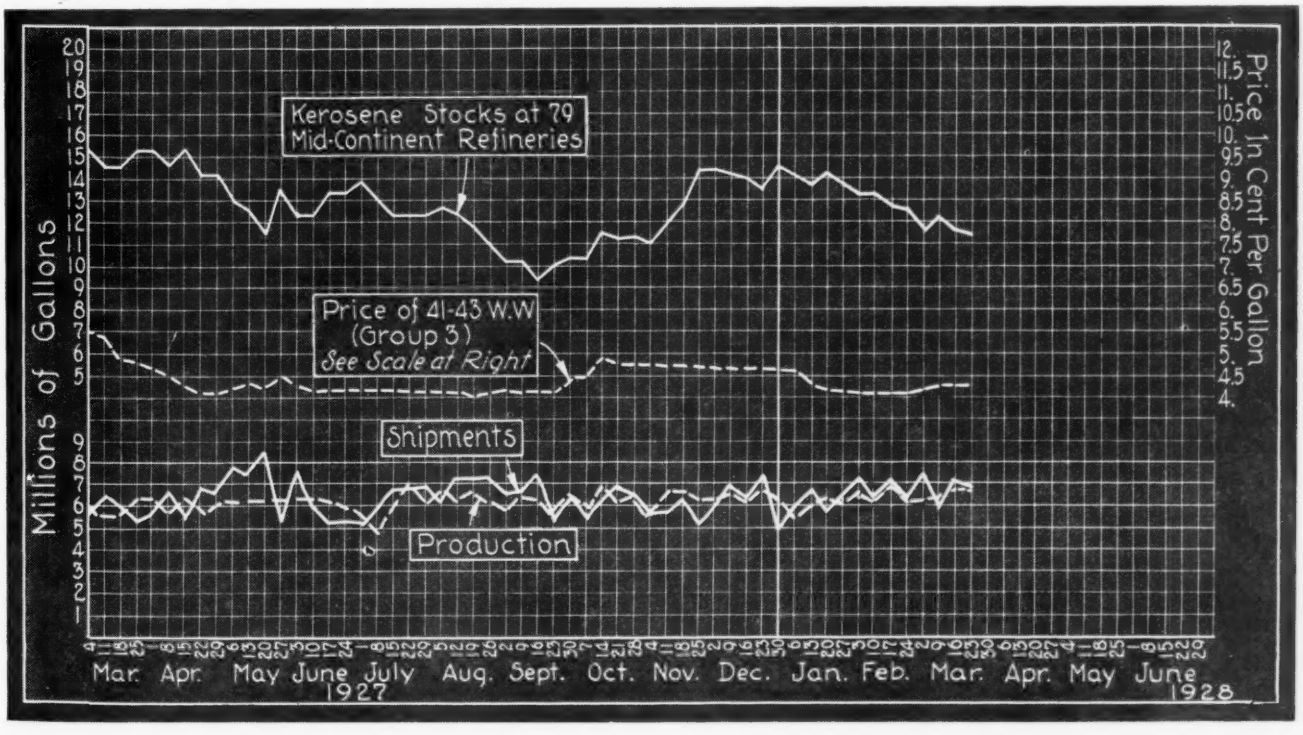
	Gallons
Production	116,684,000
Shipments	111,307,000
Net change in stocks	+ 5,377,000
Ratio sales to production	95.4%

Barometer of Mid-Continent Refinery Market—Week Ending March 23

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News

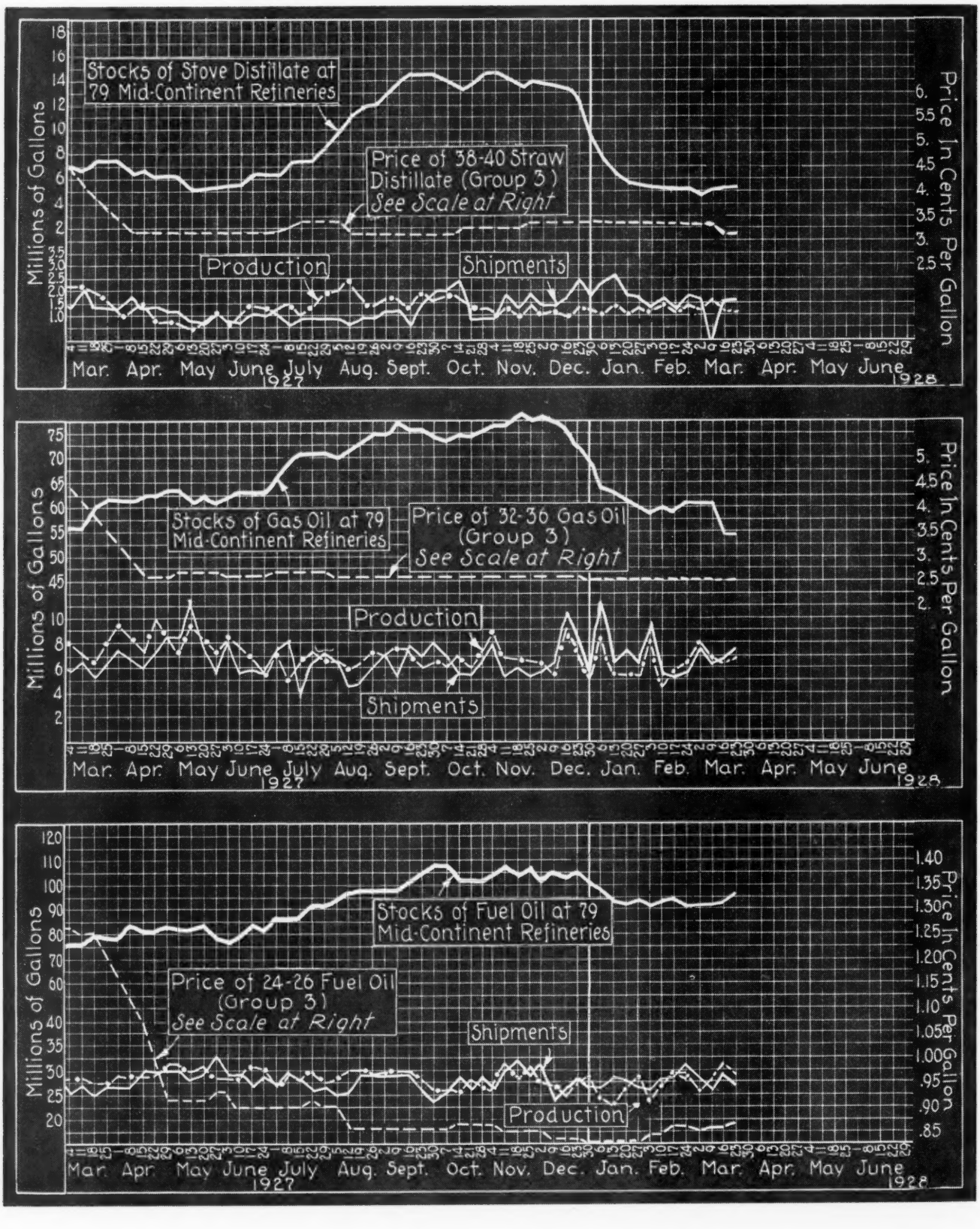

Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Production
Shipments
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page

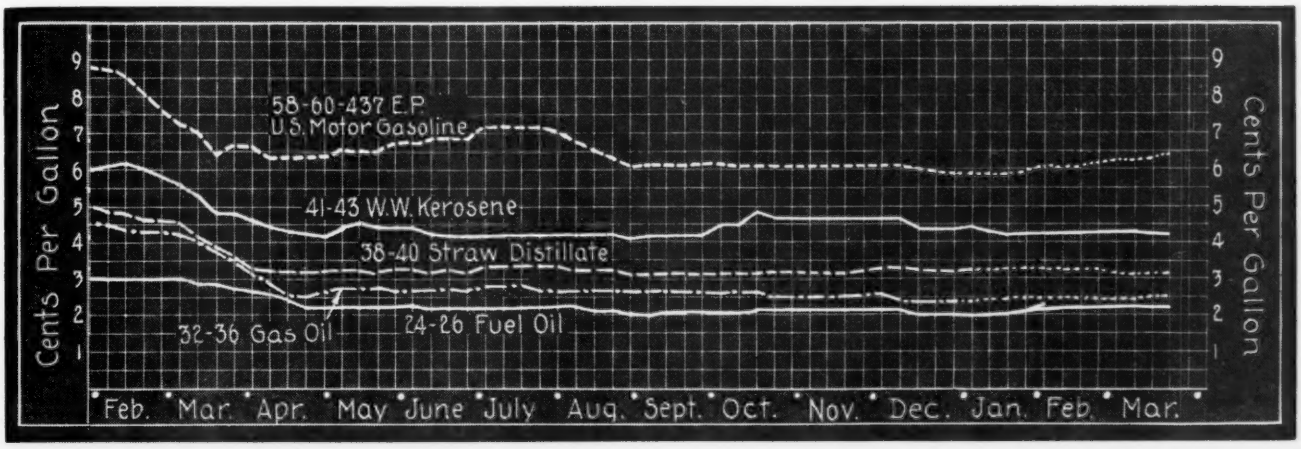

Kerosene Stocks at 79 Mid-Continent Refineries
Millions of Gallons
Price of 41-43 W.W (Group 3) See Scale at Right
Price In Cent Per Gallon
Shipments
Production
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Barometer of Mid-Continent Refinery Market—Week Ending March 23

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 79 Plants to National Petroleum News


Stocks of Stove Distillate at 79 Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Gas Oil at 79 Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928
Stocks of Fuel Oil at 79 Mid-Continent Refineries
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cents Per Gallon
Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June
1927
1928

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
Cents Per Gallon
58-60-437 E.P. U.S. Motor Gasoline
41-43 W.W. Kerosene
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.

Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

gallons in the corresponding week a year ago.

Production of gasoline 1,000,000 gallons to 39,619,000, an increase of 2.6 per cent last week, the increase in production was entirely at Oklahoma refineries.

Crude runs averaged 290,054 barrels a day, compared with 289,872 barrels a day the preceding week and 267,873 barrels a day the corresponding week a year ago. Still charges of partly refined oils were increased 500 barrels daily average to 18,579 barrels a day.

Increase in gasoline production may be attributed partly to increase in runs of unfinished oils and partly increased runs of light crude oil in Oklahoma.

The increases in gasoline stocks are about normal for the season. In the last four weeks stocks have been built up 9,804,000 gallons compared with 8,422,000 gallons a year ago. Normally Mid-Continent refiners begin to draw on gasoline stores the first or second week of April.

Export and domestic demand for kerosene remained about the same as the week before. Production was almost as large as shipments. Stocks were cut 39,000 gallons to 11,791,000 gallons. Oklahoma and Kansas refiners failed to move their output but southern group refiners substantially reduced their stocks. A year ago the same group had 15,171,000 gallons in storage. Stocks of stove distillate also are well below stocks a year ago. March 23 stocks totaled 5,107,000 gallons, compared with 7,369,000 gallons March 25, 1927.

Stocks of gas oil were reduced 1,300,000 gallons to 53,364,000 gallons. A year ago stocks were more than 7,000,000 gallons larger. Shipments of fuel oil fell sharply to 26,814,000 gallons, a loss of 4,456,000 gallons or 14.3 per cent in a week. Production was lower. Stocks were increased 2,900,000 gallons to 95,756,000 gallons.

Rates Tulsa to Northwest Are Ordered Cut

WASHINGTON, March 26.—Large cuts in rates on gasoline and other refined products, to a portion of the northwest, carrying with them the rates on fuel and other heavy oils have been ordered by the Interstate Commerce Commission, not later than June 14. This was in a second supplemental report in the case known by that body as Mid-Continent Oil Rates, 1925. Principal reductions apply from group 3 to points in the Dakotas and northwestern Minnesota, and from Whiting, Ind. to points in South Dakota. Lesser cuts, generally speaking, have been ordered from Casper and Osage, Wyo. and from Miles City, Lewiston and Great Falls, Mont. to points in South Dakota.

Rates handled in this report were reserved for later disposition when a report was made on the cases in which the relationship of rates from groups 1, 2, and 3, with their subgroups farther south and west, were prescribed to points east of the Mississippi River.

The complaints lumped together and called Mid-Continent Oil Rates, 1925, were the following: No. 15584, Sinclair Refining Co. et al. v. Ahnapee & Western et al.; No. 15585, Miller Petroleum Co. et al. v. Santa Fe et al.; No. 16065, Barnsdall Refining Co. et al. v. Louisiana & Arkansas et al.; No. 16066, North Texas Petroleum Traffic Bureau v. Same; No. 16309, South Dakota Independent Oil Jobbers Association v. Santa Fe et al.; and No. 17304, International Oil Co. et al. v. Abilene & Southern et al.

They challenged the reasonableness of all the refined rates from production points in the territory bounded on the east by the Indiana-Ohio line and on the west by the Rocky Mountains, to the near northwest.

While the rate body said the rates were unreasonable and unduly prejudicial it denied reparation on the ground that this case was a part of the general revision of rates made by the report dealing with rates to destinations east of the Mississippi, producing both increases and reductions. Where there is a revision of that sort, the complainants do not get refunds, the idea being that the cuts and increases equalize.

Rates to typical points are prescribed in the order requiring new ones not later than June 14. Rates to other points in the affected territory are to be graded between the points mentioned specifically. There is no one measuring rate in this phase such as the rate from the Tulsa group to Chicago, which, in the main part of the case was ordered up from 36 to 39 cents a 100 pounds.

Weighted Average Prices Oklahoma Market

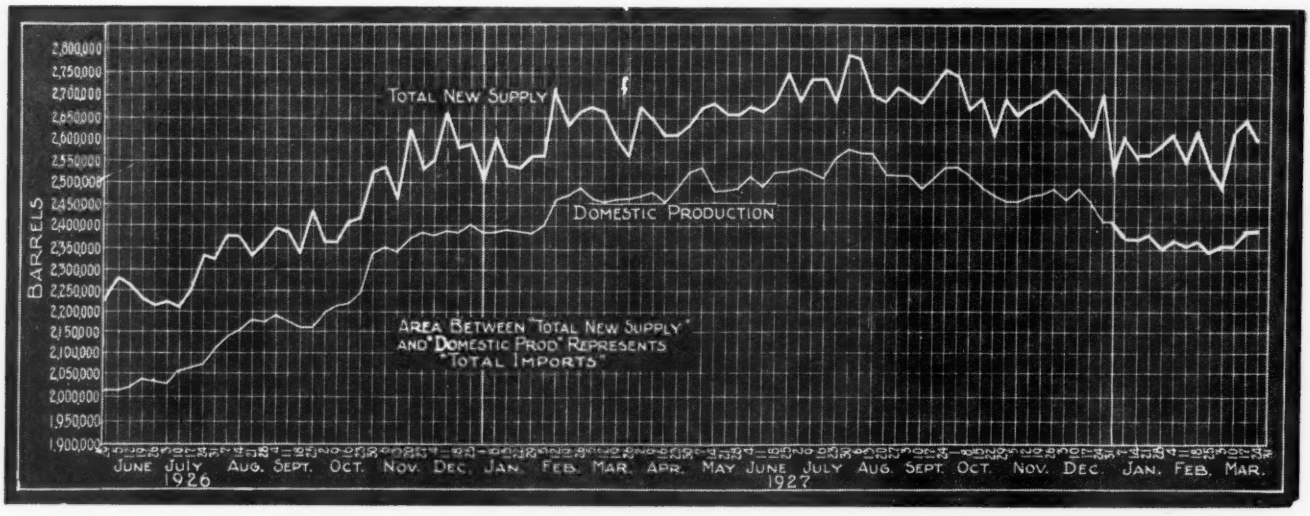
In line with National Petroleum News' new policy of carrying a weighted average price for the four more important Oklahoma gasolines in its market section, these weighted average prices, together with the number of cars of each grade sold, as of Monday March 26, are published below. The figures are not available for publication in the refinery market table on page 106 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor,		
437 e. p.	123	6.3825
60-62, 437 e. p.	22	6.6188
60-62, 400 e. p.	12	6.7500
64-66, 375 e. p.	12	7.1250

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery, in tank car lots.

CALEXICO, Cal.—Standard Oil Co. of New Mexico, a subsidiary of Standard of California, has recently opened marketing offices in Mexicali.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	March 24	March 17
Production east of Rockies	**1,769,000**	**1,779,100**
Decrease		**10,100**
Total production in U. S.	**2,387,000**	**2,388,600**
Decrease		**1,600**
Crude oil imports	**225,571**	**261,571**
Decrease		**36,000**
Total crude supply	**2,612,571**	**2,650,171**
Decrease		**37,600**

OKLAHOMA

	Mar. 24	Mar. 17
North Braman	2,850	2,850
South Braman	1,850	1,800
Blackwell	3,750	3,750
Hubbard	2,650	2,850
Thomas	1,500	1,650
Tonkawa	14,800	14,800
Garber	9,950	9,850
Burbank	41,950	44,150
Osage, outside Burbank	30,300	30,200
Watchorn	950	950
Cushing	21,100	21,150
Yale Jennings	8,850	8,850
Davenport	2,300	2,300
Bristow-Slick	24,700	24,800
North Okmulgee	15,700	15,700
Lyons-Deaner	7,300	7,400
Stroud	1,100	1,100
Cromwell	10,200	10,150
Papoose	5,000	5,050
Wewoka	7,800	7,850
Seminole	55,800	56,000
Bowlegs	82,550	84,850
Searight	17,750	18,150
Little River	40,100	40,500
Earlsboro	97,800	101,050
Duncan district	6,550	6,600
Graham	5,900	5,850
Fox	1,750	1,750
Healdton	14,100	14,150
Hewitt	8,800	8,800
Scholem Alechem	13,200	13,000
Others	85,200	83,750
Total Oklahoma	644,100	651,650
Decrease		7,550

KANSAS

Greenwood County	30,100	30,200
Florence-Covert	1,400	1,400
Peabody-Elbing	3,700	3,750
Eldorado-Towanda	14,200	14,200
Augusta-Fox-Bush	4,150	4,150
Rainbow Bend	1,650	1,600
Russell	2,800	2,900
Churchill	11,450	12,200
Oxford	16,500	14,400
Others	25,500	25,500
Total, Kansas	111,450	110,300
Increase		1,150

NORTH LOUISIANA

Homer	4,400	4,400
Haynesville	6,250	6,300
Caddo, light	10,700	11,400
Caddo, heavy	3,900	3,850
De Soto, Red River	4,100	4,100
Elm Grove	550	550
Bellevue	1,100	1,100
Cotton Valley	4,500	4,500
Urania	7,800	7,850
Pleasant Hill	700	700
Total, North Louisiana	44,000	44,750
Decrease		750

ARKANSAS

El Dorado	5,450	5,450
Champagnolle	900	950
Smackover, light	8,300	8,400
Smackover, heavy	65,450	65,800
Stephens	1,100	1,100
Nevada	1,600	1,700
Lisbon	2,350	2,400
Others	150	100
Total, Arkansas	85,300	85,900
Decrease		600

TEXAS (Outside Gulf Coast)

Hutchinson County	43,700	44,950
Carson County	6,800	6,900
Gray County	19,800	18,350
Wheeler County	1,050	1,050
Others	50	50
Total, Panhandle District	71,400	71,300
Increase		100

North Texas

Burkburnett	13,000	12,950
Electra	11,750	11,500
Iowa Park and K-M-A	1,950	1,950
Wilbarger	9,750	9,800
Archer County	18,500	18,900
Montague-Cooke	12,000	12,100
Others	600	600
Total, North Texas	67,550	67,800
Decrease		250

West Central Texas

Stephens County	7,600	7,700
Eastland-Desdemona	8,900	8,750
Brown County	12,600	12,550
Coleman County	1,850	1,700
Callahan County	4,200	4,150
Shackelford County	8,350	8,000
Young County	8,300	8,400
Throckmorton County	1,000	1,000
Palo Pinto County	500	500
Jack County	1,350	1,400
Others	600	650
Total, West Central Texas	55,250	54,800
Increase		450

West Texas

	Mar. 24	Mar. 17
Jones County	1,200	1,200
Mitchell and Scurry Counties	3,200	3,300
Howard County	4,200	3,950
Reagan County	19,500	19,800
Crane and Upton Counties	84,250	87,300
Crockett County	2,500	2,500
Pecos County	45,000	46,200
Winkler	180,100	175,000
Others	2,100	2,000
Total, West Texas	342,050	341,250
Increase		800

East Central Texas

	Mar. 24	Mar. 17
Mexia	7,400	7,400
Currie	550	550
Richland	550	550
Wortham	2,000	2,000
Corsicana-Powell	11,750	11,850
Nigger Creek	1,200	1,250
Total, East Central Texas	23,450	23,600
Decrease		150

Southwest Texas

Luling	13,750	13,800
Lytton Springs	1,500	1,500
Somerset	800	800
Laredo District	6,600	6,700
Piedras Pintas		
Dale	900	400
Others	400	400
Total, Southwest Texas	23,950	23,600
Increase		350
Total, Texas—(Outside Gulf Coast)	583,650	582,350
Increase		1,300

GULF COAST

Coastal Texas

	Mar. 24	Mar. 17
West Columbia	8,000	8,750
Damon Mound	850	900
Big Creek	1,750	1,950
Boling	2,800	2,900
Blue Ridge	7,000	6,800
Pierce Junction	9,000	9,050
Humble	1,400	1,400
Goose Creek	7,150	7,200
South Liberty	3,400	2,700
Hull	11,600	11,700
Saratoga	1,050	1,000
Batson	1,400	1,400
Barber's Hill	600	600
Sour Lake	3,500	3,500
Spindletop	35,700	37,900
Orange County	3,800	3,800
Others	2,000	2,250
Total, Coastal Texas	101,000	103,800
Decrease		2,800

Coastal Louisiana

Vinton	4,900	5,100
Lockport	4,050	3,900
Sorrento Dome		
Evangeline	950	950
East Hackberry	1,950	2,000
Edgerly	1,400	1,200
Sweet Lake	250	300
Others	4,250	4,250
Total, Coastal Louisiana	17,750	17,700
Increase		50
Total, Gulf Coast	118,750	121,500
Decrease		2,750

ROCKY MOUNTAIN

Wyoming

Salt Creek	41,050	39,850
Grass Creek	2,500	2,550
Elk Basin	1,100	900
Big Muddy	3,200	2,700
Lost Soldier	2,850	4,650
Rock Creek	2,500	2,800
Lance Creek	750	750
Teapot Dome		
Others	4,900	4,100
Total, Wyoming	58,850	58,300
Increase		550

Montana

Cat Creek	1,800	1,800
Sunburst	10,000	10,000
Others	150	150
Total, Montana	11,950	11,950

Colorado

Moffat (Craig)	1,450	1,550
Fort Collins	3,200	3,550
Florence	1,100	1,250
Others	1,700	1,800
Total, Colorado	7,450	8,150
Decrease		700

New Mexico

Table Mesa		100
Hogback	500	550
Artesia	1,150	1,300
Rattlesnake	400	350
Others	200	200
Total, New Mexico	2,250	2,500
Decrease		250
Total, Rocky Mountain	80,500	80,900
Decrease		400

CALIFORNIA

Santa Fe Springs	37,500	37,500
Long Beach	123,500	119,500
Huntington Beach	57,500	58,000
Torrance	19,000	19,000
Dominguez	12,500	12,500
Rosecrans	7,000	7,000
Inglewood	29,500	28,800
Midway-Sunset	81,000	80,500
Ventura Avenue	47,500	45,000
Seal Beach	39,000	39,000
Others	164,000	162,700
Total, California	618,000	609,500
Increase		8,500

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.)	101,250	101,750
Decrease		500

Rate of Gain in Stocks Less in February

NEW YORK, March 22.—Pipe line and tank farm gross domestic crude oil stocks east of the Rockies gained 1,961,000 barrels in February, compared with a gain of 3,713,000 barrels in January, according to the American Petroleum Institute report.

Refinery stocks of all products showed a net increase of 1,161,000 barrels in February at plants covering approximately 86 per cent of operating capacity east of California. This compares with a net increase of 2,757,000 barrels in January at plants covering 88 per cent of the capacity east of California.

Gasoline stocks east of California increased 1,512,000 barrels in February, which gain is 1,000,000 barrels smaller than the gain in January, which was 2,602,000 barrels.

Lube oil stocks increased 191,000 barrels, compared with an increase of 130,000 barrels in January.

Gas, fuel oil, kerosene stocks and refinery stocks of crude oil decreased in February. Gas and fuel oil stocks fell off 61,000 barrels, compared with a decrease of 1,987,000 barrels in January. Kerosene stocks fell off 173,000 barrels.

Refinery stocks of domestic and foreign crude decreased 139,000 barrels.

Imperial Interests Will Build Texas Refinery

TULSA, March 26.—Imperial Refining Co. interests will build a refinery in the west Texas district, it has been announced. The plant is to be a 2,500-barrel skimming plant at Wickett on the main line of the Texas & Pacific railroad.

Wickett is in Ward county, almost equally distant from the Crane and Winkler county fields. It is 5½ miles west of Monahans.

The plant is expected to be ready by May 1. It will be known as the Wickett Refining Co. Officers of the new company are C. R. Armstrong, Lock Haven, Pa., president; John T. Withers Jr., Dallas, vice president; M. B. Wooley, Dallas, secretary; W. B. Hassett, Tulsa, treasurer and general manager. The board of directors will consist of the officers and S. H. Fredericks of Lock Haven, Pa.

The same interests operate the San Angelo Refining Co. at San Angelo, the Kettle Creek Refining Co. at El Dorado, Ark., and own the Imperial Refining Co. plant at Ardmore which is now shut down.

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— to prevent fire and evaporation —

—if the openings on the steel roof are not properly protected.

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Oceco Fittings are protecting many millions of barrels of tankage today. This is proof of the pudding.

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The heart of the rig is the WHEEL

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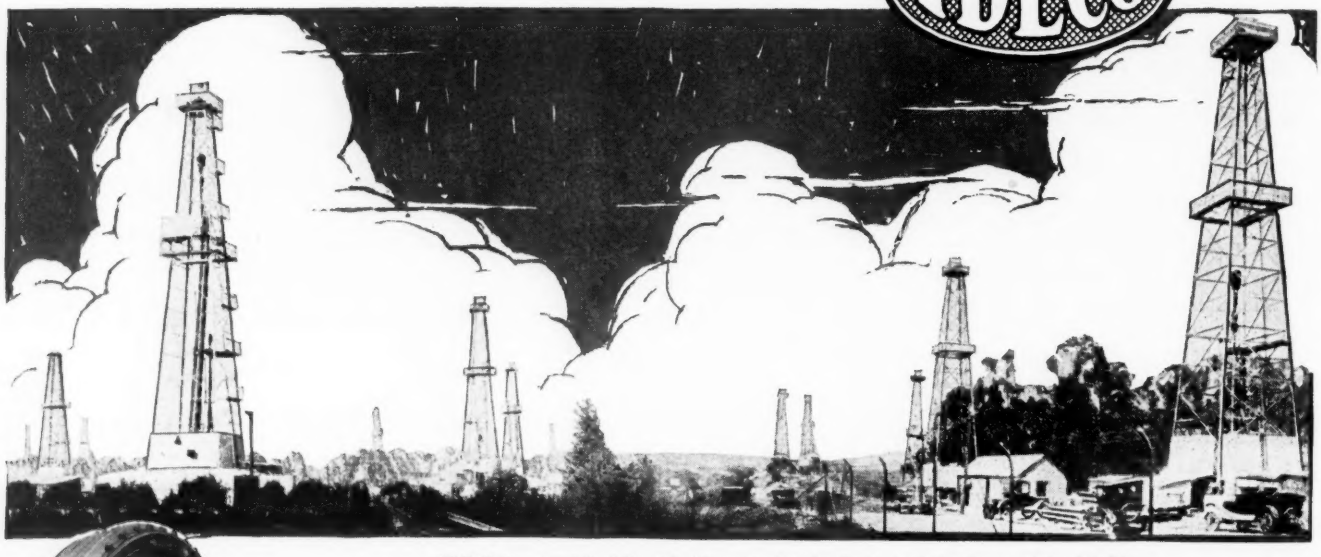
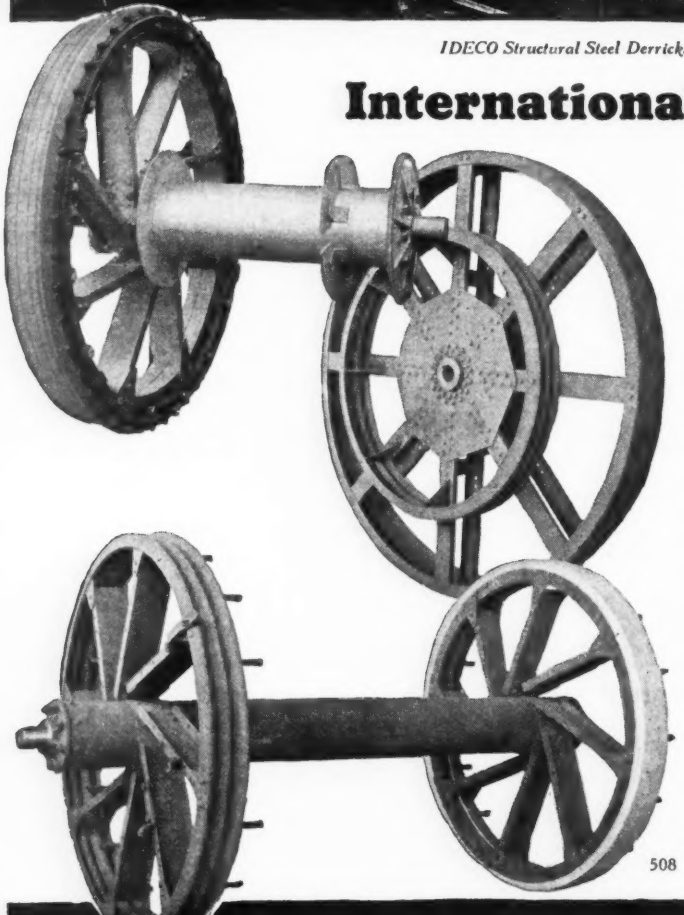


IDECO Structural Steel Derricks (Galvanized) today dominate the landscape of the oil fields.

International IDECO Steel Wheels



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International "IDECO" Steel Wheels, in standard lengths and sizes, are designed by experienced engineers, to meet the specific needs of practically every type of Oil, Gas and Artesian drilling and production work.

Unusual features of "IDECO" Wheels are their perfect balance, their rolled edge steel tug rims, the patented Ideco Removable Gudgeons, the strong, riveted construction that eliminates vibration, and adds years to the life of the wheel.

Furnished with either "all-steel" or "steel-and-wood" faced brake wheels, for use on complete "IDECO" steel rigs, or any other standard design.

Specifications and complete information furnished on application to the nearest International office.

INTERNATIONAL STEEL IDECO WHEELS
(GALVANIZED)

The International Derrick & Equipment Company

Columbus, Ohio **Torrance, Cal.**

Branches in All Important Oil Fields.

Little That is New and Nothing Novel Greets Spring in Mid-Continent

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, March 24

SPRING came in the Mid-Continent unattended by the usual surging of the wildcatters hopes. There are just about enough wells being started to balance against completions. Few of the new ones are prompted by anything but lease obligations.

Principal comfort is drawn from the continued decline of the Seminole district. That decline is quite slow and scarcely perceptible to the naked eye some days. The district did, however, get down to 289,000 barrels on one day during the week. There is nothing to indicate that it will again see the 300,000-barrel figure. Wildcat activity is well in hand and, with the restrictive agreements on five promising areas recently extended to May 1, the older production will be well down the slope before the new areas cut any figure.

A test that has been much in the limelight for several months blew up during the week. This was the Carter Oil Co.'s No. 1 Phillips, in the NW NE NW of 18-6-8E, southeast Seminole county, about eight miles due south of the Wewoka field. It had oil in the Woodford formation and a showing in the Simpson and was thought to be on a "high." It topped the Wilcox at 4179 feet and at 4181 feet got a hole full of water.

In the territory southwest of the Seminole district, important wells in Twp. 7-4E continued to make notable production. (See map, page 41, March 21 issue.) McCulloch and Mid-Continent Petroleum Corp.'s No. 1 Smith, in the NW SE of 25-7-4, holds at around 1750 barrels and the Magnolia Petroleum Co.'s big well in the SE SW SE of 15-7-4, more than a week old, was holding at 3400 barrels, having made about 4000 barrels at its peak.

These wells call for some new work, but nothing like a big campaign will be put on because of the uncertainty of the territory. The Magnolia well is producing from the Hunton lime, which is generally unreliable both in continuity and in sustained production. The McCulloch and Mid-Continent well produces from that part of the Simpson formation above the Wilcox and is also looked upon as an erratic horizon. The latter well is to be drilled to the Wilcox if it ceases to be a paying well in the Simpson.

In the same township, Gypsy Oil Co.'s No. 2 McGee, in the NW SW NE of Sec. 23, a Hunton lime well, is making between 1700 and 1800 barrels.

Amerada Petroleum Corp. is drilling an important test in the SW SE NE of 1-8-4E, which will have some bearing on the much advertised Twp. 8-5 pool. In Sec. 14 of the latter township, Barnsdall Oil & Gas Co. has a well of large capacity which is pinched in by agreement with other operators of the vicinity. The Amerada well is about six miles northwest of the Barnsdall well. Amerada's well had top of the Hunton at 4114 feet and made one flow from that formation. At the end of the week it was drilling at 4220 feet and was soon to be completed. If it is a producer in the Wilcox, it will add importantly to the possibilities of the area opened by the Barnsdall well.

On the northern fringe of the Little River pool, Prairie Oil & Gas Co.'s No. 1 Chilcoat, southwest corner of 25-8-6, is producing better than 1000 barrels daily on air lift. It provides a slight extension to the field and calls for three offsets, but its behavior does not indicate anything important to come in the area.

THE feature well of the week, from standpoint of size, was completed in the Oxford pool of Summer county, Kans. Roxana Petroleum Corp.'s No. 2 Barnes, SE SW SW of 14-32S-2E, completed as a small well earlier, was shot with 200 quarts in sand at 2012-2112 feet and made 4128 barrels in the ensuing 24 hours. It was notable only for its size however, being in proven territory.

The Lost Springs pool of Marion county, Kans., continues to get new wells, but thus far nothing of outstanding importance has come in. The pay is a chat formation whose history elsewhere has not been imposing. A late report on the production of the 22 wells in the pool is as follows, figures on production being in barrels:

Phillips Pet Co.	No. 1 Wells	SW NW	22-17-4E	43
Phillips Pet Co.	No. 1 Raznicek	NW SW	22-17-4E	188
Phillips Pet Co.	No. 1 Peterson	NW SW NW	23-17-4E	141
Phillips Pet Co.	No. 1 McCoy	SE NE NE	22-17-4E	131
Phillips Pet Co.	No. 2 McCoy	SE NE NE	22-17-4E	87
Phillips Pet Co.	No. 1 Mower	SW NE NE	22-17-4E	31
Phillips Pet Co.	No. 1 Frank	NW SE SE	15-17-4E	23
Phillips Pet Co.	No. 3 Raznicek	NW SW SW	22-17-4E	35
Phillips Pet Co.	No. 3 Peterson	NW SW NW	23-17-4E	40
Prairie Oil & Gas	No. 1 Mowrer	SE NE	21-17-4E	168
Prairie Oil & Gas	No. 1 Raznicek	NW NE SW	22-17-4E	123
Loriaux et al	No. 1 Barnes	SE NE NE	22-17-4E	90
Loriaux et al	No. 1 Shoup	NE NE	22-17-4E	62
Ward	No. 1 Layton	SE NE NE	22-17-4E	78
Reynolds	No. 1 Nettorourer	SW NW NW	23-17-4E	108
Loriaux et al	No. 1 Peterson	SW NW NW	23-17-4E	81
Loriaux et al	No. 1 Merilatt	SE SW NW	23-17-4	183
Loriaux et al	No. 1 Fowler	SW NW NW	23-17-4E	110
Independent	No. 1 Bevan	NE SE SE	21-17-4E	80
Sinclair	No. 1 Bevan	NE SE	21-17-4E	149
Braden-McClure	No. 1 Smith	NE NE	22-17-4E	43
Winters-Harwood	No. 1 Ucker	SW SE SW	2-17-4E	10
	22 wells			1,985

Gladys Belle Reorganized

TULSA, March 22.—Properties of the Gladys Belle Oil Co. have been acquired by the newly organized Marquette Oil Corp. At the first meeting of stockholders of the new company, Harrison S. Green, president of the Gladys Belle was elected president of the Marquette. Daily production taken over amounts to 1,100 barrels daily and the company has 25,000 acres undeveloped leases and royalties in Oklahoma, Texas and Arkansas. Through sale of a Semino'e district lease in 1927 indebtedness was paid and the company owes only current monthly bills.

Besides Mr. Green, the officers are X. R. Gill, Okmulgee, vice-president; Harry Slater, Detroit, vice-president and J. T. Miller, Tulsa, assistant secretary and treasurer. The directors are Harry Slater, vice-president of the Union Trust Co., Detroit; Mr. Foster, president of General Fireproofing Co., Youngstown; R. P. Brewer, chairman of the board First National Bank, Tulsa; X. R. Gill, Okmulgee; M. M. Doan, Tulsa; H. S. Green, Tulsa and J. T. Miller, Tulsa.

Seminole District Production by Companies and Leases, March 21 and March 14, 1928

BOWLEGS

Company	Farm	S.T.R.	March 21 Wells	March 21 Prod.	March 14 Wells	March 14 Prod.
Amerada	Rascoe	15- 8-6	8	2,005	8	2,155
Atlantic	Baker	1- 8-6	4	575	4	449
Atlantic	Fleet	23- 8-6	4	515	4	430
Atlantic	Grayson	21- 8-6	3	769	4	1,048
Atlantic	A. Jones	10- 8-6	3	95	3	100
Atlantic	C. Jones	9- 8-6	2	183	2	193
Total Atlantic			16	2,137	17	2,330
Barnsdall	McNac	28- 8-6	1	30	1	28
Barnsdall	Murrow	11- 8-6	4	927	4	954
Total Barnsdall			5	957	5	982
Carter	Bowlegs	15- 8-6	4	1,500	4	1,475
Carter	Burden	23- 8-6	3	295	3	275
Carter	Harjoche	15- 8-6	6	720	6	775
Carter	Hilly	23- 8-6	3	910	3	915
Carter	Jones	11- 8-6	4	1,465	4	1 545
Carter	McGeisey	21- 8-6	1	0	1	0
Carter	Melisse	9- 8-6	1	175	1	180
Carter	Walker	15- 8-6	4	700	4	720
Carter	Wise	23- 8-6	12	3,460	12	3,500
Total Carter			38	9,225	38	9,385
Empire	Lacey	15- 8-6	6	525	6	468
Empire	Wise	23- 8-6	2	482	2	505
Total Empire			8	1,007	8	973
Gypsy	Bowlegs	22- 8-6	1	160	1	0
Gypsy	Bradley	8- 8-6	1	0	1	0
Gypsy	Cumsey	8- 8-6	4	1,512	4	1,517
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	950	4	710
Gypsy	Harjoche	10- 8-6	2	3,327	2	3,390
Gypsy	Jones	11- 8-6	1	312	1	327
Gypsy	Walker	15- 8-6	8	1,907	8	1,985
Gypsy	Wise	23- 8-6	3	292	3	320
Total Gypsy			25	8,560	25	8,349
I. T. I. O.	Barnett-A	24- 8-6	2	355	2	328
I. T. I. O.	Barnett-B	24- 8-6	1	242	1	209
I. T. I. O.	Billington	22- 8-6	5	872	5	970
I. T. I. O.	Bowlegs	22- 8-6	11	1,528	11	1,917
I. T. I. O.	Davis	13- 8-6	4	1,297	4	1,356
I. T. I. O.	Fay	18- 8-6	9	2,469	9	2,653
I. T. I. O.	Goforth	15- 8-6	12	1,566	12	1,332
I. T. I. O.	Livingston	15- 8-6	11	3,314	11	3,483
I. T. I. O	Lizzie	11- 8-6	2	517	2	560
I. T. I. O.	Walker	15- 8-6	8	893	8	974
I. T. I. O.	Wilmott	15- 8-6	4	721	4	797
I. T. I. O.	Work	24- 8-6	1	150	1	140
I. T. I. O.	Youngblood	22- 8-6	2	65	2	27
Total I. T. I. O			72	13,989	72	14,346
McCulloch	Bowlegs	22- 8-6	2	389	2	300
Magnolia	Davis	13- 8-6	3	655	3	663
Magnolia	Davis-M	13- 8-6	1	273	1	240
Magnolia	Hammond	10- 8-6	3	402	3	499
Magnolia	Rhodes	10- 8-6	3	4,610	3	4,553
Magnolia	Van Buskirk	9- 8-6	1	357	1	307
Total Magnolia			11	6,686	11	6,262
Mid-Continent	Baker	10- 8-6	4	1,541	4	1,523
Mid-Continent	Bowlegs	22- 8-6	1	55	1	70
Mid-Continent	Smith	12- 8-6	6	600	6	637
Total Mid-Continent			11	2,196	11	2,230
Minnehoma	Bowlegs	15- 8-6	4	290	4	269
Prairie	Gahagan	23- 8-6	4	455	4	370
Prairie	Harber	10- 8-6	8	3,935	8	3,915
Prairie	Jones	11- 8-6	4	425	4	300
Prairie	Templeton	12- 8-6	6	2,695	6	3,055
Prairie	Whitney	23- 8-6	4	520	4	465
Total Prairie			26	8,030	26	8,105
Pure	Reed	14- 8-6	15	2,695	15	2,751
Pure	Strother-D	14- 8-6	4	544	4	606
Pure	Strother-F	10- 8-6	4	1,304	4	1,579
Total Pure			23	4,533	23	4,936
Roxana	Taylor	16- 8-6	5	633	5	818
Shaffer	Lacey	14- 8-6	3	295	3	230
Sinclair	Bowlegs	22- 8-6	1	50	1	85
Sinclair	Cumsey	10- 8-6	4	4,546	4	4,878
Sinclair	Ellen	11- 8-6	7	1,375	7	1,549
Sinclair	Harjo	14- 8-6	3	720	3	740
Sinclair	Jones	8- 8-6	6	4,118	6	4,315
Sinclair	Taylor-M	10- 8-6	4	2,734	4	2,869
Sinclair	Taylor-W	10- 8-6	1	1,338	1	1,538
Sinclair	Walker	22- 8-6	4	705	4	965
Total Sinclair			30	15,586	30	16,933
Texas	Reed	14- 8-6	11	2,875	11	2,870
Tidal	Grayson	13- 8-6	4	850	4	900
Tidal	Harjoche	10- 8-6	6	1,849	6	2,090
Total Tidal			10	2,699	10	2,990
Twin State	Jones	10- 8-6	3	100	3	135
TOTAL BOWLEGS			311	81,813	312	85,024

LITTLE RIVER

Company	Farm	S.T.R.	March 21 Wells	March 21 Prod.	March 14 Wells	March 14 Prod.
Amerada et al	Fore	35- 8-6	2	915	2	970
Amerada	Nitey	35- 8-6	3	2,915	3	2,970
Total Amerada			5	3 830	5	3,940
Barnsdall	Hotulke	22- 8-6	1	40	1	52
Blackwell	Nitey	35- 8-6	6	2,666	6	2,630
Carter	Fish	1- 7-6	6	1,695	6	1,690
Carter	Jackson	11- 8-6	1	285	1	300
Total Carter			7	1,980	7	1,990
Continental	Cosar	2- 7-6	3	1,850	3	1,812
Gypsy	Brown	33- 8-6	1	50	1	50
Gypsy	Campbell	36- 8-6	2	142	2	172
Gypsy	Nungee	35- 8-6	1	25	1	40
Gypsy	Pottey	36- 8-6	3	495	3	410
Total Gypsy			7	712	7	672
Independent	Harris	23- 7-6	1	2,722	1	2,825
Indep. et al	Davis	2- 7-6	2	1,720	2	1,760
Total Independent			3	4,442	3	4,585
I. T. I. O.	Campbell	1- 7-6	1	112	1	119
I. T. I. O.	Dungan	35- 8-6	3	2,495	3	2,499
I. T. I. O.	House-M	1- 7-6	1	278	1	292
I. T. I. O.	A-House-W	1- 7-6	1	59	1	0
I. T. I. O.	B-House-W	2- 7-6	3	1,619	3	1,549
I. T. I. O.	Hull	26- 8-6	1	65	1	86
I. T. I. O.	Jackson	1- 7-6	3	2,126	3	2,203
I. T. I. O.	McCulla	1- 7-6	3	935	3	978
I. T. I. O.	Nitey	2- 7-6	7	1,464	7	1,549
I. T. I. O.	Phoebe-A	36- 8-6	3	780	3	796
I. T. I. O.	Phoebe-B	36- 8-6	4	396	4	403
I. T. I. O.	Reed	1- 7-6	1	486	1	98
I. T. I. O.	Sotkneche	1- 7-6	4	881	4	1,010
Total I. T. I. O.			35	11,695	35	11,582
Magnolia	Cruse	2- 7-6	1	516	1	355
Magnolia	Dixon	31- 8-7	1	49	1	57
Magnolia	Pottey	35- 8-6	4	980	4	877
Total Magnolia			6	1,545	6	1,289
Mid-Continent	Smith	12- 8-6	1	35	1	35
Mid-Continent	Wadsworth	26- 8-6	7	1,050	7	992
Total Mid-Continent			8	1,085	8	1,027
Pine et al	Pottey	35- 8-6	2	992	2	1,065
P & R	Chilcoat	25- 8-6	1	1,080	1	900
P & R	Dungan	36- 8-6	2	95	2	0
P & R	House	2- 7-6	4	2,045	4	1,835
Total P & R			7	3,220	7	2,735
Roxana	Smith	1- 7-6	1	7	1	7
Shaffer	Narcome	36- 8-6	1	95	1	97
Sinclair	Cosar	36- 8-6	2	1,620	2	1,635
Snowden et al	Tiger	13- 8-6	1	3,432	1	3,237
Superior	Wadsworth	1- 7-6	1	13	1	16
Texas	Coker	1- 7-6	3	600	3	585
Tidal	House	1- 7-6	3	1,075	3	1,070
Tidal	Johnson	1- 7-6	1	60	1	65
Total Tidal			4	1,135	4	1,135
TOTAL LITTLE RIVER			103	40,960	103	40,091

EARLSBORO

Company	Farm	S.T.R.	March 21 Wells	March 21 Prod.	March 14 Wells	March 14 Prod.
Amerada	Anderson	15- 9-5	2	1,245	2	1,300
Amerada	Cowden	4- 9-5	8	1,835	8	1,995
Amerada	Rodgers	3- 9-5	2	785	2	835
Total Amerada			12	3,865	12	4 130
Atlantic-Sinc	Foreman	18- 9-5	1	175	1	185
Barnsdall	Brown	10- 9-5	4	1,973	4	1,876
Barnsdall	Bruner-F	2- 9-5	2	877	2	896
Barnsdall	Bruner-N	11- 9-5	4	1,599	4	1,678
Barnsdall	Cudjo	11- 9-5	1	30	1	27
Barnsdall	Davis-D	11- 9-5	3	776	4	1,166
Barnsdall	Davis-J	11- 9-5	4	676	4	831
Barnsdall	Davis-M	11- 9-5	3	115	3	138
Barnsdall	Gibson	9- 9-5	8	3,532	8	2,534
Barnsdall	Hearn	15- 9-5	1	5	1	4
Barnsdall	Ingram	4- 9-5	7	3,137	7	3,780
Barnsdall	Pack	10- 9-5	4	246	4	305
Barnsdall	Peter	10- 9-5	4	295	4	355
Barnsdall	Sango	2- 9-5	3	6,898	3	6,738
Barnsdall	Sebolka	15- 9-5	1	592	1	706
Barnsdall	Sullivan	10- 9-5	2	58	2	62
Barnsdall	Watsutke	12- 9-5	4	1.712	4	1,890
Total Barnsdall			55	22,521	55	23,040
Carter	Davis	13- 9-5	2	590	2	590
Carter	Payne	12- 9-5	3	130	3	130
Carter	Sango	2- 9-5	4	2,865	4	2,450
Total Carter			9	3,585	9	3,170
Continental	Kays	2- 9-5	2	210	2	315
Continental	Spencer	12- 9-5	4	930	4	1,160
Total Continental			6	1,140	6	1,475
Empire	Barker	12- 9-5	1	1,215	1	1,260
Empire	Edmundson	3- 9-5	3	1,163	3	1,175
Total Empire			4	2,378	4	2,435
Gypsy	Bruner	10- 9-5	4	3,040	4	2,690
Gypsy	Carter	11- 9-5	9	3,267	10	3,850
Gypsy	Earl	16- 9-5	1	17	1	17
Gypsy	Hunick	5- 9-5	1	2,270	1	2,217
Gypsy	Noble	12- 9-5	4	3,867	4	2,940
Gypsy	Peter	10- 9-5	3	192	3	182
Gypsy	Sango	1- 9-5	5	3,910	5	5,525
Gypsy	State	16- 9-5	4	1,350	4	1,082
Total Gypsy			32	17,913	33	18,503
Independent	Bruner	10- 9-5	4	270	4	265
Indep.	Gaines	11- 9-5	4	1,245	4	1,240
Indep.	Knapp	8- 9-5	4	2,075	4	2,340
Indep.	Sullivan	10- 9-5	3	192	3	110
Total Independent			15	3,782	16	3,580
Magnolia	Bryant	9- 9-5	6	1,923	6	2,265
Magnolia	Cowden	4- 9-5	4	80	4	80
Magnolia	Dixon	12- 9-5	1	28	0	0
Magnolia	Edmundson	3- 9-5	3	30	3	4 0

(*Continued on Page 43*)

Seminole District Production by Companies and Leases, March 21 and March 14, 1928

(*Continued from Page 42*)

Company	Farm	S.T.R.	March 21 Wells	March 21 Prod.	March 14 Wells	March 14 Prod.
Magnolia	Holmsley	11- 9-5	8	2,174	8	1,497
Magnolia	Ingram	10- 9-5	1	30	1	30
Magnolia	Lena	10- 9-5	3	80	3	80
Magnolia	Seay	12- 9-5	9	4,098	9	3,720
Magnolia	Simpson	10- 9-5	3	317	3	296
Magnolia	Sparks	11- 9-5	7	1,356	7	1,451
Magnolia	Sullivan	12- 9-5	3	247	3	169
Total Magnolia			48	10,363	48	9,628
Mid-Continent	McCumber	9- 9-5	7	345	7	425
Mid-Kansas	Anderson	14- 9-5	3	125	3	155
Phillips	Dunnaway	15- 9-5	1	30	1	20
Phillips	Graham	9- 9-5	4	257	4	207
Total Phillips			5	287	5	227
Prairie	Baker	23- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,950	5	3,920
Prairie	Graham-C	3- 9-5	2	35	2	30
Prairie	Graham-O	10- 9-5	4	1,845	4	1,915
Prairie	Stidham	11- 9-5	13	4,655	13	4,055
Total Prairie			25	10,535	25	9,970
Roxana	Bayliss	17- 9-5	1	14	1	15
Roxana	Spencer	12- 9-5	2	1,948	2	1,905
Total Roxana			3	1,962	3	1,920
Shaffer	Clark	1- 9-5	6	1,031	6	1,186
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	2	140	3	175
Sinclair	Sango	2- 9-5	2	4,010	2	3,990
Total Sinclair			5	4,165	6	4,180
Skelly	Spencer	12- 9-5	1	680	1	695
Texas	Anderson	2- 9-5	6	710	6	637
Texas	Brown	10- 9-5	8	2,120	8	2,120
Texas	Rodgers	5- 9-5	4	3,500	4	4,725
Texas	Wilmont	10- 9-5	7	2,302	7	2,735
Total Texas			25	8,632	25	10,217
Tidal	Watkins	9- 9-5	8	3,045	8	2,985
Twin State	Barker	12- 9-5	4	100	4	105
Twin State	Hearn	2- 9-5	4	2,532	4	2,230
Total Twin State			8	2,632	8	2,335
TOTAL EARLSBORO			282	99,161	286	100,816
TOTAL LITTLE RIVER			103	40,960	103	40,091
TOTAL SEARIGHT			71	17,829	71	18,228
TOTAL BOWLEGS			311	81,813	312	85,024
TOTAL SEMINOLE			310	55,746	310	56,132
GRAND TOTAL SEMINOLE AREA			1,079	295,509	1,082	300,291
Avg. per well				274		277

Completions in Oklahoma and Kansas, Week Ended March 24, 1928

OKLAHOMA

Creek County

Company	Well No.	Location	Depth	Init. Prod.
Thomas et al	3	NWc SE NW 16-17-11 E	1762-1793	2M
Young et al	1	NWc SE SE 23-17-10 E	T.D. 2485	10

Garfield County

Company	Well No.	Location	Depth	Init. Prod.
Marland	1	C NW SW 24-24-3 W	T.D. 5125	Dry

Garvin County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	SEc NW NE NE 15-1-3 W	T.D. 1930	Dry

Grady County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	1	SEc SW NW 8-4-6 W	T.D. 3905	Dry
Carter	9	SEc NW SW 16-3-5 W	T.D. 2558	Dry
Okla. Gas	5	NWc SW SE 23-5-8 W	T.D. 2400	25M
Okla. Gas	3	SWc NW NW 25-5-8 W	T.D. 2450	9M
Hall-Briscoe	1	SEc NW SW SW 25-5-8 W	2175-2400	18M
Little Nich	5	NWc 35-5-8 W	2035-2400	18M
Anderson	1	NEc SE SE 28-3-5 W	2514-2538	75

Grant County

Company	Well No.	Location	Depth	Init. Prod.
Argo	1	SWc SE SE 15-27-3 W	4108-4115 OWD	575

Hughes County

Company	Well No.	Location	Depth	Init. Prod.
Carter	6	NW SE SE 19-8-10 E	T.D. 4660	Dry

Kay County

Company	Well No.	Location	Depth	Init. Prod.
Wheeler	1	SEc SW SW 14-27-1 W	T.D. 917	Dry
Royal	1	NWc 8-27-1 E	T.D. 1306	Dry
Miller Bros	1	NWc SE 10-25-1 E	T.D. 4167	Dry
Prairie	2	NEc NE 30-27-1 W	T.D. 1865	Dry
Carter	7	C NE SW 17-29-1 E	1787-1795	7M
Industrial	1	C SE SE 35-28-1 W	740-750	1.3M
Royal	1	C SW SE 33-28-1 E	T.D. 1115	10M

Muskogee County

Company	Well No.	Location	Depth	Init. Prod.
Tidal	8	NWc SE SW 34-15-18 E	1807-1845	4M
Blackwood et al	1	SEc NE SW 6-14-19 E	514-531	280
Boyle et al	2	CWL SW NE 10-15-15 E	T.D. 1653	Dry

Okfuskee County

Company	Well No.	Location	Depth	Init. Prod.
Umbrum	1	NWc SE NW 2-19-11 E	1738-1748	15

Okmulgee County

Company	Well No.	Location	Depth	Init. Prod.
Eggle Picher	1	SEc SW 4-12-14 E	T.D. 2870	Dry
Buzzard et al	1	NWc NE NE 27-11-13 E	T.D. 2995	Dry

Osage County

Company	Well No.	Location	Depth	Init. Prod.
Osage	1	NWc NE 1-21-8 E	T.D. 500	Dry
Lewis Bros	5	NEc SW SW 2-26-6 E	2845-2910	700
Marland	4	NEc SE NE SE 27-25-9 E	2118-2180	75
Standish	7	SWc NW NW SE 2-25-11 E	1646-1730	15
Oliphant et al	1	SEc NW NW 7-24-19 E	1940-1945	15

Payne County

Company	Well No.	Location	Depth	Init. Prod.
Fern et al	1	NWc NE SW 15-19-5 E	T.D. 3280	Dry

Pawnee County

Company	Well No.	Location	Depth	Init. Prod.
Garber et al	1	SWc SE 21-21-8 E	T.D. 1720	Dry

Pontotoc County

Company	Well No.	Location	Depth	Init. Prod.
Westheimer	1	SEc 8-19-8 E	803-817	20
Shaffer	5	SWc 9-5-8 E	2445-2497	250
Homaokla	5	SEc NW 17-5-8 E	2410-2449	20
Ramsey	1	NWc NE SW 17-5-8 E	2337-2902	75
Crosby-Hicks	1	SEc NE SW 8-4-7 E	1044-1054	35

Pottawatomie County

Company	Well No.	Location	Depth	Init. Prod.
Magnolia	2	NE SE NE 14-7-4 E	3586-3595	14
Gypsy	2	NW SW NE 19-7-4 E	T.D. 3891	490
Prairie	1	SWc NE SE 18-7-5 E	3882-3894	60
McCullough	1	SE SW SW 18-7-4 E	T.D. 4060	Dry

Seminole County

Company	Well No.	Location	Depth	Init. Prod.
Snowden-McSweeney	2	NWc NE 15-10-8 E	T.D. 3960 OWD	Dry
Barnsdall	5	SEc SW NW 1-9-5 E	T.D. 4415	Dry
Tidal	8	NW SW 10-8-6 E	T.D. 4683	Dry
Carter	1	SWc 7-8-7 E	T.D. 4435	Dry
Prairie	1	SEc NE 22-8-8 E	T.D. 2575	Dry
Texas	1	NEc NE NW 10-9-8 E	4348-4357	2½M
Magnolia	3	SWc NW SW 12-8-6 E	4102-4131	252
Magnolia	4	NE SE NE 35-8-6 E	4289-4299	200
Mid-Continent	2	NW NE NW SE 7-5-8 E	2550-2572	735

Stephens County

Company	Well No.	Location	Depth	Init. Prod.
Big Twelve	5	SEc SW 27-1-8 W	1694-1702 OWD	40
American	1	NWc SW 7-2-7 W	1533-1539	302
Magnolia	2	NWc NE 13-1-4 W	2600-2625	46M
Murphy	11	NWc NE SW 12-2-8 W	T.D. 2135	Dry

Tulsa County

Company	Well No.	Location	Depth	Init. Prod.
Glidden et al	1	SWc NE 15-19-11 E	T.D. 2275	Dry
Caldwell et al	1	NWc SW 18-19-12 E	T.D. 2327	Dry
Superior	10	NWc SW SW SW 6-19-10 E	2030-2073	35
Minshall et al	5	NEc SE SE SW 15-19-11 E	T.D. 2208	20
Jackson-Wise	1	SWc NW NE 21-19-12 E	1537-1553	5
Berrt et al	3	NWc NE 3-16-12 E	1414-1525	5

Wagoner County

Company	Well No.	Location	Depth	Init. Prod.
Sewell et al	2	CEL SE NE 18-17-16 E	T.D. 1658	Dry

KANSAS

Butler County

Company	Well No.	Location	Depth	Init. Prod.
Federal	12	C NL NE 31-26-8 E	T.D. 1298	Dry
La Robb	1	SEc NE SW 6-27-6 E	T.D. 3175	Dry
Empire	1	SEc 13-28-5 E	T.D. 3188	Dry
Basom et al	1	NEc SE NE 26-28-6 E	T.D. 2830	Dry

Coffey County

Company	Well No.	Location	Depth	Init. Prod.
Bruce et al	1	NWc SW SW 23-22-13 E	T.D. 2243	Dry
McCullough	1	CWL SE NW 23-22-13 E	1829-1853	15

Cowley County

Company	Well No.	Location	Depth	Init. Prod.
Barnsdall	1	NEc SE NE 7-33-3 E	3486-3490	150
Roxana	1	NWc SW 19-31-3 E	T.D. 2005	Dry
Watchorn	1	C NW NW 4-34-6 E	T.D. 770	Dry

Greenwood County

Company	Well No.	Location	Depth	Init. Prod.
Ritchey-Moore	1	NEc SW 4-32-10 E	T.D. 2400	Dry
Schwartz et al	1	SWc 28-22-11 E	T.D. 2036	Dry
Empire	10	NEc SE 25-22-12 E	T.D. 1855	Dry
Superior	1	SEc NW NE 33-22-13 E	T.D. 1922	Dry
Carnes et al	1	NEc SE 4-24-13 E	T.D. 1801	Dry
Skelly et al	2	SWc SE SE 3-22-10 E	2144-2188	100
Theta	6	NEc SE SE 23-22-12 E	1679-1711	125
Darby	9	SEc NW 30-22-13 E	1714-1767	300
Polhamus et al	1	SEc 36-25-10 E	1984-1990	35
Gilliland-Cross	1	CEL SE SE 9-25-13 E	1500-1511	32
Devine et al	1	SWc NE 22-26-11 E	635-660	1½M

Marion County

Company	Well No.	Location	Depth	Init. Prod.
Phillips	1	NEc SW SE SE 15-17-4 E	2386-2464	25
Lariaux et al	1	SEc NE NE 22-17-4 E	2375-2443	90
Lariaux et al	1	NEc SE NE NE 22-17-4 E	2384-2417	65
Phillips	2	SWc NW SW 22-17-4 E	2387-2443	35
Ward et al	1	NWc SE NE NE 22-17-4 E	2387-2444	75
Phillips	3	NWc SW NW 23-17-4 E	2372-2440	40
Reynolds et al	1	SWc NW NW 23-17-4 E	2355-2428	90
Prairie	1	22-17-4 E	T.D. 2433	190

McPherson County

Company	Well No.	Location	Depth	Init. Prod.
Tatlock et al	1	NEc NW NW 32-13-2 W	2927-2957	8½M

Sumner County

Company	Well No.	Location	Depth	Init. Prod.
Roxana	1	NEc Tract-5, 14-32-2 E	1265-1275	15
Washahoma	1	NEc SE NE SE 26-31-2 E	T.D. 1912	Dry

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended March 24, 1928

NORTH AND EAST CENTRAL TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Brown County				
Scrivnor et al	1-Meirs	SA&MG	1177-1214	75
Humble	11-Gilbreth	Board	1280-1299	50
Henshaw	1-Bush	Kenney	1110-1121	275
Henshaw	2-Bush	Kenney	1090-1101	250
Charter	4-Byler	T&NO	1313-1317	45
Uhl et al	1-Camp	Barton	375-389	15
Williams et al	2-Eddington	Mitchell	T.D. 1268	Dry
Duffield et al	1-Cox	Duncan	T.D. 1745	Dry
Callahan County				
Knigwood et al	1-Sherry	Vic. Co. SL	T.D. 1595	Dry
Maddox	2-Cowan	Comal	337-351	2
Eastland County				
Gulf Prod	2-Horn	McLennan	1290-1302	30
Livingston et al	1-Thompson	H&TC	3734-3782	3M
Barkley et al	3-Duffer	McLennan	2983-3003	3M
Schimmel Prod	1-Hamilton	McLennan	3112-3131	10& ½M
Lone Star	3-Anderson	Womack	3105-3120	2½M
Schimmel Prod	1-Earnest	H&TC	T.D. 1590	Dry
Parsons	1-Howard	McLennan	T.D. 3065	Dry
Parsons	1-Jones	McLennan	T.D. 3321	Dry
Cranfill-Reynolds	1-Tate	Ackerman	T D. 1445	Dry
Hoosier et al	1-Henry	Feneway	T.D. 1359	Dry
Jones County				
Weaver et al	1-Smith	TP	2495-2534	30
Palo Pinto County				
Strawn	24-Stuart	TP	1690-1702	5
Shackleford County				
Nash et al	1-Moberly	TP	T.D. 1350	Dry
Big States	4-Webb	Russ	T.D. 1227	Dry
Roeser-Pendleton	1-	....	1336-1350	620
Tannehill	1-Mathews	ET	1140-1186	683
Roeser-Pendleton	31-Cooke	ET	1341-1349	40
Humble	4-Davis	ET	1738-1751	18
Simmons et al	3-Harvey	TP	1650-1655	160

NORTH TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Archer County				
Fain-McGaha	4-Wilson	Geraldine	1563-1566	50
Fain-McGaha	1-Wilson	Geraldine	1554-1569	98
Fain-McGaha	2-Wilson	Geraldine	1562-1573	70
Fain-McGaha	1-Wilson	Geraldine	1553-1563	125
Golhke et al	1-Worden	Geraldine	1565-1567	30
Golhke et al	1-Taylor	Geraldine	1553-1561	75
Humble-Burns	2-Wilson	Geraldine	1557-1562	60
Johnson et al	2-Wilson	Geraldine	1557-1569	15
Simms	22-Turbeville	Carson	1491-1495	20
Panhandle	1-Garvey	TE&L	753-771	17
Pois-Johnson	1-Jackson	Aldridge	T.D. 1604	Dry
Kelleher et al	1-Netherton	Bell	T.D. 1527	Dry
Maer Staniforth	1-Thurman	Harris	T.D. 1550	Dry
Rose et al	1-Farmer	Winters	T.D 1550	Dry
The Sun	18-Farmer	BCSL	T.D. 1475	Dry
Robertson et al	1-Meade	Blount	T.D. 1407	Dry
Cullum et al	1-Anderson	SP	T.D. 1506	Dry
Texas	1-Graham	Sweeney	T.D. 1256	Dry
Clay County				
Ashcraft	1-Hamilton	Stanley	T.D 2149	Dry
Cooke County				
Harris	1-Lewis	Sadler	T.D. 2273	Dry
Foard County				
Roxana-Fain et al	2-Mathews	GC&SF	852-925	2M
Montague County				
Carter et al	1-Heaton	Buckman	T D. 834	Dry
Pet. Prod	3-Howard	Robertson	T.D. 1426	Dry
Carter et al	2-Bouldin	Chacon	800-816	25
Spencer-Rhodes	2-Bouldin	Chacon	818-841	30
Pet. Prod	2-Howard	Robertson	1393-1425	26
Wichita County				
Stump et al	1-Chilson	DCSL	T.D. 1853	Dry
Wilbarger County				
Murchison	1-Waggoner	SP	T.D. 1990	Dry
Murchison	1-Waggoner	H&TC	T.D. 1604	Dry
Texas	2-Waggoner	H&TC	708-723	.70M
Lowery	1-Deep	H&TC	845-857 53	(15 hrs.)
Fain-McGaha	1-Waggoner	H&TC	1288-1295	16
Phillips	2-Waggoner	H&TC	2280-2288	61
Barkley et al	2-Waggoner	H&TC	2448-2460	137
Fain-McGaha	3-Waggoner	H&TC	2342-2356	140
Petroleum Prod	4-Waggoner	H&TC	2386-2390	10
Texas	7-Waggoner	H&TC	2384-2403	115
Waggoner	1-Waggoner	MEP&P	2356-2375	20
Texas	1-Waggoner	MEP&P	2356-2375	92
Young County				
Cunningham et al	2-Hawkins	TE&L	502-512	140
Cunningham et al	3-Hawkins	TE&L	505-527	180
Pennell et al	2-Boone	BBB&C	510-531	283
Allday et al	2-McKinley	TE&L	502-526	120
Riggs et al	1-McKinley	TE&L	512-526	125
Johnson	1-Garvey	TE&L	T.D. 783	Dry
Texas Unity	1-Gregg	Dawson	T.D. 819	Dry
Allday	5-Johnson	Sargent	T.D. 604	Dry
Pennell et al	1-Boyd	BBB&C	T.D. 600	Dry

PANHANDLE

Company	Well Farm	Location Survey	Depth	Init. Prod.
Gray County				
Gurnsey	1-McKinney	I&GN	3025-3264	12½&15 M
Randall County				
Westbrook et al	1-Deckman	H&GN	T.D. 4050	Dry
Wheeler County				
Rock et al	1-Lindsey	H&GN	1965-1994	425&30M
Sun	1-Savic	H&GN	1934-2025	430&55M

WEST TEXAS

Company	Well Farm	Location Survey	Depth	Init. Prod.
Andrews County				
Cosden	1-Ratliff et al	PSL	T.D. 4116	Dry
Schleicher County				
Gray et al	1-Robinson	GH&SA	T.D. 3565	Dry
Pecos County				
Phillips	1-Smith	GC&SF	1255-1380	161
Mid-Kansas et al	1-Yates	I&GN	1152-1324	1567 (6½ hrs.)
Mid-Kansas et al	10-Smith et al	GC&SF	1264-1465	2127 (8 hrs.)
Mid-Kansas et al	11-Smith et al	GC&SF	1285-1499	1499 (5 hrs.)
Mid-Kansas et al	12-Smith et al	GC&SF	1310-1484	2072 (4 hrs.)
Mid-Kansas et al	16-Yates	I&GN	1305-1410	924 (1 hr.)
Tom Green County				
Marland	1-Johnson	Sanderson	T.D. 3461	Dry
Howard County				
F. H. E	1-Roberts	W&NW	2515-2531	150 (12 Hrs.)
Lockhart	1-Roberts	W&NW	2990-3019	100
Marland	1-Clay	W&NW	2880-3566	60
Merrick-Lamb	3-Clay	W&NW	1779-1780	30 & 1½M
Vi-Tex	2-Clay	W&NW	1757-1808	30

Completions in North Louisiana and Arkansas, Week Ended March 23, 1928

Company	Well	Location	Depth	Yield
Louisiana—Caddo Parish—Reisor				
C. E. Simmons	Mattie Meyer No. 2	21-17-13	925	salt water, abd.
Union Parish				
Industrial Gas Co.	Hill No. 2	9-20-3E	2162	5M gas
Richland Parish				
Noe&Meredith, Tr.	Boughton No. 1	4-15-6E	2445	40M gas
East Texas—Harrison Co. (Waskom)				
Nick Barbare	Hudspeth No. 1	R. W. Bedford HRS	1900	10M gas
Panola County				
Magnolia Pet Co.	Tillery No. 1	Jane Thorpe HRS	2370	2M gas
Nat. Gas & Prod.	T. C. Adams No. 3	Evans-Bracken HRS	985	3M gas
Texas Company	T. C. Adams B-9	Isom Hatcher HRS	1070	dry, aband.
D. Thomason	Crenshaw No. 4	John Womack HRS	985	5M gas

Drilling Operations in Oklahoma, Kansas and Texas, Week Ended March 24, 1928

	March 24 Week Ended					March 17				
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	..	4	16	..	20	..	5	17	..	22
Other Osage	4	6	13	3	26	4	3	15	4	26
Bristow-Cushing	2	4	40	10	56	3	6	38	10	57
North Oklahoma	10	7	61	34	112	10	6	56	40	112
South Oklahoma	14	25	125	34	198	19	17	133	30	199
Muskogee	..	13	43	19	75	..	10	39	17	66
Okmulgee	11	32	74	23	140	13	38	64	23	138
Seminole Dist	22	40	140	15	217	21	44	126	15	206
Total Oklahoma	63	131	512	138	844	70	129	488	139	826
KANSAS	37	69	128	61	295	31	66	131	64	292
TEXAS										
Central	..	94	262	152	508	..	94	338	164	486
Panhandle	..	65	98	67	230	..	57	95	70	222
N. Central	..	58	98	30	186	..	54	94	32	180
West	..	122	205	133	260	..	117	202	125	444
Laredo	..	1	25	19	45	..	1	25	19	45
Total Texas	..	340	688	401	1,429	..	323	644	410	1,377
New Mexico	..	6	18	22	46	..	6	17	13	36
GRAND TOTAL	100	546	1,346	622	2,614	101	524	1,280	626	2,531

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended March 24, 1928

OKLAHOMA

Carter County

Company	Well No. Farm	Location
Boring et al	2-Walker	SWc SE NW 10-4-2 W

Creek County

Thompson-Black	4-Broadnax	NWc SE SE NW 16-17-11
Henry-Avers	3-Harris	CSL SE SE 12-17-10
Dixie	1-Pahcakney	NEc SE NW 28-18-11
Kennedy-Hornet et al	1-Tiger	NEc NW NW 25-18-11 OWD
National Ref	2-Futrell	SEc NE SE 1-19-9
Burlingane et al	15-Miller	CNL S½ SW NW 13-19-8 E
Swindler et al	1-Micco	SEc SW SW 7-14-10

Grady County

Commerce Dev	1-Pond	NEc NW SW 13-4-8 W
Okla. Gas	2-Williams	NEc SW SW 11-4-8 W
Okla. Gas	4-Serrata	NWc SW NW 25-5-8 W

Grant County

Argo	1-Lane	NEc 27-27-3 W OWD

Hughes County

Bunte et al	1-Turner	NWc SE 14-8-9 E

Jefferson County

Daniels	1-Black	NWc SW SW SE 16-7-5 W

Kay County

Blackwell	2-Heighley	C SE NE 29-25-1 W
Rogers et al	1-Roberts	C NE NE 5-26-1 W
Sinclair	1-Hall	SEc NW 19-27-1 W OWD
Tidal	3-Cole	C S½ SE 18-29-1 E

Logan County

Roxana	3-Sebranneh	NWc NE 30-19-4 W
Roxana	2-Stephens	NWc SW 29-19-4 W
Roxana	2-Ross	SEc SW SE 19-19-4 W

Muskogee County

Mitchel	2-Barnett	SEc SW SW 35-16-15 E
Boyle et al	5-Barnett	CN½ SE 8-15-15 E
Bryan-Fmery	1-Barnett	CSL SE NE 8-15-15 E
Pine et al	1-Simmons	NWc NE NW 9-15-15
Blackwood	2-	SWc SE NE SW 6-14-19 E
Decius-Garrett	1-	SEc NE SW 6-14-19 E
Metzger et al	7-Crittenden	NWc SW NE SE 6-14-19 E
Tillman et al	1-Cobb	SEc NE SW SW 6-14-19 E
Towner-Witt	1-	6-14-19 E Lot-7, Blk-16
Towner-Witt	1-Wade	SEc NW SE NW 6-14-19 E
Walton	2-Kell	CNL SE SW 6-14-19 E
Grosscurth et al	1-Kell	SEc NE NW 7-14-19 E
Graves et al	4-Flowers	CSL SE NW 5-13-16 E
Sioux	2-Jordan	NEc SE SE 14-13-18 E

Okmulgee County

Elm	10-Rentie	SEc SE 13-13-14 E
Gene	1-Monday	NEc SE 19-13-14 E
Selby	16-Flint	NWc SE NE 26-14-14 E
Independent et al	8-Wisener	C SW SE 7-15-13 E OWD

Osage County

Peters	4-	SEc NW SW 26-25-9
Minnehoma	3-	CE½ Fp SW¼ 11-26-8
I. T. I. O	345-	SWc NE SE 2-25-11

Pontotoc County

Ada Dev	1-Floyd	C W½ NE 7-3-7 E
Hughes	1-Gann	NWc SE 15-4-7 E
Hall	1-Brydid	NWc SE 33-5-5 E
I. T. I. O	2-Taylor	SEc SW SE 29-5-5 E

Pottawatomie County

Magnolia	1-Fyke	NWc SW SE 20-7-5 E
Slick	1-Harper	NEc NW SE 19-7-5 E
Magnolia	1-Shipshewohno	SWc NE 19-7-5 E
Magnolia	3-Shipman	SEc NW NE 19-7-4 E
Magnolia	2-Singletary	NWc SE SW 14-7-4 E
Independent	1-Jordan	SEc 10-7-4 E
Slick	1-Spangler	NWc 17-7-2 E

Seminole County

Luisiana	2-Reed	SEc NE NE 18-5-8 E
Gilcrease	2-Reed	NWc NE 18-5-8 E
Gilcrease	1-Reed	NEc NW NE 18-5-8 E
Anderson et al	1-Culley	SEc SW NE 18-5-8 E
Texas	5-Hyde	SWc NE SE 7-5-8 E
Texas	4-Hyde	NWc NE SE 7-5-8 E
Sinclair	1-Amos	NEc SW 7-5-8 E
Sinclair	1-Amos	SWc NE 7-5-8 E
Mid-Continent	10-Fleet	SEc SW SE 7-5-8 E
Mid-Continent	9-Fleet	SEc NW SE 7-5-8 E
Mid-Continent	8-Fleet	NEc SW SE 7-5-8 E
Mid-Continent	7-Fleet	NWc SE SE 7-5-8 E
Mid-Continent	6-Fleet	NWc SE 7-5-8 E
Carter	1-Spillman	SEc SW SW 7-6-8 E
Sands	1-Harrison	SWc NW SE 4-7-7 E
Carter	1-Fish	NWc SW 12-7-6 E
Slick	1-Williams	NEc SE NE 15-7-6 E

Stephens County

Pace	Allen	NEc NW NE 3-28-8 E
Pace et al	1-Wilson	NEc NW 12-2-8 W
Franklin	1-Fobb	NEc SE 12-2-8 W
Smith	1-Miller	SEc NE 25-1-4 W
Snodgrass	4-Malernee	NEc NW 34-1-8 W
Medlin et al	2-Burke	SWc NW NW NE 34-1-8 W
Martin et al	1-Vestal	C NE SE 20-2-5 W

Tulsa County

Short-Maness et al	1-Stanwaite	NEc NW 15-18-12 E
Glidden	3-Riverbed	SWc NE NW SE 15-19-11
Glidden	2-Riverbed	CWL NW SE 15-19-11
Caldwell et al	1-Hodge	SWc SE SE 10-19-11

KANSAS

Butler County

Sage-Fowler et al	1-Alberts	SWc SE SE 21-25-4 E
Empire	1-Evertson	SEc NW NE 17-28-7 E

Chase County

Denman et al	1-Ewers	C NW SE 15-18-6 E

Dickinson County

Phillips	1-Cugler	SEc NW 11-14-4 E

Elk County

Smith-Ash	1-Hand	SEc NW SE 21-31-9 E

Greenwood County

Empire	8-Ott	SEc NW NW 25-22-12 E
Empire	11-Schwab	C N L NW SE NE 25-22-12 E
Empire	4-Ott	SWc NE NE 26-22-12 E
Darby	10-Schwab	CNL SE SE NW 30-22-13 E
McCullough	2-Roglin	C W L SW SW 10-25-13 E
McCready	1-Gustin	SEc SW 34-25-13 E
Hawle[illegible] et al	1-Pederson	NWc NE SW 4-26-13 E
Rockhill et al	1-Jones	SWc NE 21-26-13 E

Marion County

Rosenthal et al	1-Talchman	NWc SW SW 13-17-3 E

McPherson County

Mid-Kansas	1-Larson	C NE SW 31-18-2 W
Tatloyd	1-Chinberg	C SW NW 32-18-2 W

Russell County

Liggett et al	1-Chrisler	SWc NW SW 9-11-15 W

Sumner County

De Forrest Drlg	1-Meyers	NEc SE SE SE 26-30-2 W
Roxana	4-Barnes	SEc SW SW SW 14-32-2 E
Palmer et al	5-Weinrich	NEc NW NW NW 23-32-2 E
Palmer et al	6-Weinrich	NWc 23-32-2 E
Palmer et al	7-Weinrich	C W L NW NW 23-32-2 E
Hartman-Skaer	1-Garves	SEc 7-35-1 E

TEXAS

NORTH AND NORTH CENTRAL

Archer County

Company	Well No. Farm	Location	Survey
Bridwell	1-Holosch	Blk-4	Probert
McGregor et al	5-Farmer	....	Anderson
Panhandle et al	4-Farmer	....	Anderson
Texas	1-Young	Sec-2, Abstract-1118	Hooper et al
Razor	1-Tuberville	Sec-153	Chacon
Humble et al	3-Wilson	Blk-217	Gera'dine
Fain-McGaha	3-Wilson	Blk-20	Geraldine
Fain-McGaha	4-Wilson	Blk-20	Geraldine
Fain-McGaha	2-Wilson	Blk-27	Gera'dine
Johnson et al	3-Wilson	Blk-26	Gera'dine
Galbker et al	2-Parrish	Blk-232	Geraldine
Empire	1-Parkey	Sec-11, Blk-3, Abst.-205	H&TC
Elliott et al	1-Wolfe	Abstract-1095	Finch

Brown County

Phillips	10-Hickman	Blk-783	Benson
Breeding et al	2-Hickman	Blk-783	Benson
Evans	1-Tate	Blk-796	Lackerman
Lloyd	2-Collins	Blk-139	Smith
Metts	2-Childers	Sec-10	HT&B
Bush-Apinney	3-Richards	....	SAMG
Mitcham	1-Brooks	Blk-126	Sparks
Superior	1-Perry	Blk-624	Kenney
Clark Buffalo	5-Brown Co. Fee	Blk-624	Kenney
Clark Buffalo	6-Brown Co. Fee	Blk-624	Kenney
Peckham et al	3-Bush	Blk-624	Kenney
Wentz et al	1-Keeler	Blk-624	Kenney
Clark Buffalo	1-Perry	Blk-624	Kenney
Forest	4-Moore	Blk-4	SA&MG
Jay Hawk	3-Boyson	Blk-4	Williams
Hawk	4-Boyson	Blk-4	Williams
Smith	1-Trueheart	Blk-638	Lamar
Pandem	6-Hutton	....	Nobles
Pandem	7-Hutton	....	Nobles
Rowser et al	1-Hill	Blk-63	Mudget
Amerada	1-Graham	Sec-4, Blk-137	Brown
Brock et al	1-Trapp	Blk-52	Isom
Wilburn	1-Taylor	Sec-63	HT&B
Phillips et al	1-Shewmaker	Sec-3	HT&B

Callahan County

Turley	3-Diller Bros.	Sec-52	LAL
Humble	1-Head Bros.	Sec-40	BBB&C
Syndicate	1-Jackson	Sec-4	Powell
Armstrong	1-Hickman	Sec-2	I&GN
Neeley	1-Anthony	Sec-2	D&DA

Clay County

Weatern	2-Wright	Sec-2632	TE&L

Coleman County

French	1-Lowe	Sec-77, Blk-667	Goodwin
Oswego	1-Miller	Sec-23	HT&B
Selby	1-Neill	Blk-747	Wright
Dozier et al	1-Harris	Blk-175	Peters
Manhattan et al	1-Richardson	Sec-49, Blk-666	Doran

Concho County

Dutton et al	1-Samson	Sec-27, Blk-72	T&NO

Cooke County

Fain-McGaha	2-Chafin	....	Reed

Eastland County

Forster	1-Spencer et al	Sec-29, Blk-2	H&TC
Knox	1-Lightfoot	Sec-3, Blk-6	ET
Parson	2-Scott	Blk-8	Howell
Sowell Bros	1-White	Sec-23, Blk-2	ET

Jones County

Phillips	6-Winters	Sec-19, Blk-19	T&P

Montague County

Spencer et al	3-Bouldin	....	Chacon
Curtis et al	3-Bouldin	....	Chacon
Curtis et al	1-Jones	Sec-9, Abstract-179	Donoho

Shackleford County

Hogan et al	1-Flippin	Sec-69, Blk-11	T&P
Brawer et al	1-Matthews	Sec-2	ET
Harris et al	1-Mathews	Sec-57	ET
Rosser et al	61-Cook	Sec-6	ET
Skelly	3-Mathews	Sec-34	ET
Tannehill	2-Mathews	Sec-34	ET

Throckmorton County

Murry Bros. et al	1-Mathews	Abstract-186	Carr
Fain-McGaha	2-Waggoner	Sec-50, Blk-4	H&TC

Young County

Panhand'e et al	2-Pitman	Abstract-1421	Elwire
Pennell et al	2-Boone	Abstract-34	BBB&C
Shappel	2-Johnson	Abstract-253	Sargent
Kleinre-West	4-Lagston	Sec-1490	TE&L
Cooper et al	1-Adams	Abstract-252	Sallier
Fuller et al	1-Croner	Sec-2701	TE&L
Fisher et al	1-Curtis Bros.	Sec-1594	TE&L

(Continued on Page 46)

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended March 24, 1928

(Continued from Page 45)

PANHANDLE AND WEST

Gray County

Company	Well No. Farm	Location	
Hickory	1-Lester	SEc NE NW Sec-1, Blk-1	ACH&B
Plains Drlg.	1-Chapman	SE SW NW Sec-50, Blk-A-9	H&GN
McElroy	1-Davis	NEc Sec-12, Blk-1	ACH&B
Plains Drlg.	2-Chapman	NEc Sec-20, Blk-1	ACH&B
Plains Drlg.	2-Davis et al	NE SE SE Sec-1	Davis
Scott-Travis	1-Chapman	SW NE SE Sec-70, Blk-25	H&GN
Osborne et al	1-Morse	SWc NE Sec-1, Blk-26	H&GN
Dillard et al	1-Keahy	NEc SE Sec-202, Blk-B-2	H&GN
Lefors	2-Leach	NWc of Leach farm	

Hutchinson County

Antelope Creek	3-Sanford	NEc Sec-82, Blk-46	H&TC
Barnum et al	1-Johnson	NWc Sec-37, Blk-Y	A&B
Timms	1-Jordan et al	NEc NW SE Sec-124, Blk-4	I&GN

Moore County

Amarillo	1-Crawford	C SE Sec-26, Blk-P	EL
Amarillo	1-Seay	C Sec-85, Blk-2	G&M
Amarillo	1-Sneed	C W½	Hall

Pecos County

Southern Crude	1-Scharbauer	SEc Sec-20, Blk-134	T&ST L
Roxana et al	1-Univ.	Sec-23, Blk-26	Univ
Phillips	1-Blackman	C NE NW Sec-4, Blk-9	H&GN
California	2-Smith	Sec-37, Blk-194	GC&SF
California	1-Smith	Sec-26, Blk-194	GC&SF

Val Verde County

Company	Well No. Farm	Location	
Valvert	1-Bassett	C E½ Sec-46, Blk-Y	GH&SF

Ward County

Estex	1-Estes	C Sec-4, Blk-B-29	PSL
Great Basin	1-Carter et al	Sec-32, Blk-	H&GN

Winkler County

Danciger	1-Sealey	SWc NE Sec-93, Blk-A	GN&MB&A
Atlantic et al	4-Hendricks	NEc NW Sec-40, Blk-26	PSL
Skelly	1-Hendricks	NWc NE Sec-40, Blk-26	PSL
Republic Prod.	1-Hendricks	NW NE SE Sec-42, Blk-B-5	PSL
Atlantic	7-Hendricks	SE NE SW Sec-34, Blk-B-5	PSL
Atlantic	8-Hendricks	NE SE SW Sec-34, Blk-B-5	PSL
Atlantic	6-Hendricks	NW SW NW Sec-29, Blk-B-5	PSL
Humble	12-Hendricks	SE SW NE Sec-34, Blk-B-5	PSL
Humble	13-Hendricks	SW SE NE Sec-34, Blk-B-5	PSL
Landreath Prod.	6-Hendricks	NEc NW SW Sec-29, Blk-B-5	PSL
Pure	7-Hendricks	NEc SE SE Sec-34, Blk-B-5	PSL
Pure	8-Hendricks	SE NE SE Sec-34, Blk-B-5	PSL
Pure	9-Hendricks	NW NE SW Sec-34, Blk-B-5	PSL
Pure	10-Hendricks	NE NW SE Sec-34, Blk-B-5	PSL
Pure	11-Hendricks	SW NW SE Sec-34, Blk-B-5	PSL
Pure	12-Hendricks	NW SW SE Sec-34, Blk-B-5	PSL
Roxana	4-Hendricks	NE SW SE Sec-29, Blk-B-5	PSL
Southern Crude	2-Hendricks	SE NE SE Sec-30, Blk-B-5	PSL
Southern Crude	3-Hendricks	NE SE NE Sec-30, Blk-B-5	PSL

Yates Field Crude Shipments To be Slightly Increased

HOUSTON, March 23.—Increased runs of Yates field crude are to bring the market outlet up from 48,000 barrels to 52,000 barrels daily. Starting April 1, Shell Pipeline Corp. will run the production of the associated Roxana Petroleum Corp., from the field.

Runs will be within the limits of the allowed production under the Yates field prorating agreement. Gulf Pipeline Co. has been running the oil of the associated Gulf Production Co., under similar conditions, although these interests did not sign the agreement. Gulf runs approximately 6000 barrels daily.

Humble Pipeline Co. has been handling 30,000 barrels daily and Illinois Pipeline Co., companion corporation to Mid-Kansas Oil & Gas Co., about 12,000 barrels daily under the prorating plan in effect since last year.

Because of the edge character of a well recently completed by Osage Oil Co., in the Crockett county extension of the field, its opening for production has not been considered a problem for the prorating committee. The well, on a two-acre tract, has been exploited the last week at 1500 barrels daily. Its owners are not party to the prorating agreement.

A week ago, the Osage interests (Wrightsman and others) began making common carrier shipments of crude from the well to the Kansas City, Mexico & Orient railroad through a short line of the Illinois Pipeline Co. Announcement was made at that time that deliveries were being made f.o.b. cars on a crude sales contract with Sinclair Refining Co. of Louisiana at the field price of 60 cents a barrel, the sellers absorbing pipeage. This is the first underselling of the field price of Yates crude reported.

Now it is reported the Osage interests have sold their two-acre lease and well to the Grayburg Oil Co., of San Antonio, for a reported $100,000 cash and $200,000 in oil produced. It is reported Grayburg will make common carrier tenders of 3000 barrels daily to Illinois Pipeline Co. for delivery at Lytle station, on its main trunk system, near San Antonio, where Grayburg will accept delivery. This amount would be in excess of what the property would be allowed under the prorating agreement.

Correction

Information received after the market tables at the back of this issue were published, indicates that price on March 26 of U. S. Motor gasoline, 53-55 gravity, in the Pacific Export market on page 111, should be 6.375 to 6.75 cents, instead of 6.25 cents. One refiner was asking 7 cents on March 26 for his gasoline.

Wackman Manager Dies

ST. LOUIS, Mo., March 27.—R. S. Moulden, manager of the North Kansas City plant of the Wackman Welded Ware Co., St. Louis, died suddenly on March 19.

LOS ANGELES—Clint Collins of La Verne, Cal., is now connected with the St. Helens Petroleum Co., Ltd., making dealer contracts for St. Helen's products. Mr. Collins was formerly president of the Collins Oil Co. which distributed gasoline and oil in the Pomona valley. A year ago, the Collins Oil Co. was sold to the Marine Corp.

Adopt Standard Charcoal Gas Testing Method

LOS ANGELES, March 23—The "Tentative Standard Pressure Charcoal Test for Gasoline Content of Natural Gas", presented at the Fall Meeting of the California Gasoline Association, in Los Angeles last November, and published in NATIONAL PETROLEUM NEWS, Dec. 7, Page 78, was adopted by vote of the association at the March meeting in Los Angeles.

The standard as adopted is the outcome of the work which has been carried on by the gas testing committee of the association during the past several months, and represents a summing up of the best current practice in the determination of the gasoline content of natural gas by the manufacturers of natural gasoline in the state of California.

It is believed by all concerned that this standard test will be fair to both the producer and the manufacturer, and its use is recommended in connection with all royalty settlement tests.

If, as the result of the adoption and use of this standard test, any improvement can be made in the test method, such improvement will, after due trial, be incorporated in the standard procedure. It is the hope of the association that this procedure will result in the evolution of the most practical test in the minimum space of time.

The standard as adopted will be published in the form of a bulletin by the association in the near future, and will be distributed or sold to members or others who may be interested. When available for distribution copies may be obtained by communicating with the secretary of the association, Paul D. Barton, 701 South Palm Avenue, Alhambra, Cal.

J. M. CUSHMAN

Who was recently elected president of the Iowa Independent Oil Men's Association, Des Moines, Ia. Mr. Cushman is president of the International Oil Co., Des Moines, Ia.

Excess Gas to be Pumped Into Depleted Sands

LOS ANGELES, March 24

THE gas conservation committee representing oil companies of California, working in cooperation with the governor's committee, has about completed plans for taking care of more than 40,000,000 cubic feet daily, by pumping this gas into partially depleted oil sands in four different oil fields.

Pumping of gas into the formations at west Coyote, which has been in progress for a number of months, will be continued.

Considerable gas had been pumped into this field prior to the winter period, using the formation for storage purposes. During December, January and February, the high gas consumption period, gas was taken from the formations for commercial use.

This plan is being worked through cooperation of the Ventura Fuel Co. and the Standard Oil Co., and it is expected during the coming spring and summer, that about 5,000,000 cubic feet of gas daily will be pumped into the formation.

The Ventura Fuel Co., in conjunction with the Union Oil Co., plans to store about 15,000,000 cubic feet daily, in the formation on the Union Stearn lease at east Coyote. Proper connection of pipe lines is now being worked out for this field.

At the Domingues field, the wells have been subject to a repressuring experiment for more than a year. The leases are held almost entirely in this field by the Union and Shell Oil Cos., the experiment being a cooperative one. The new plans call for pumping some 15,000,000 cubic feet of gas daily into key wells at Dominguez, which is expected to increase production of the oil wells and at the same time store in the formations gas from Signal Hill that otherwise would go to waste.

California Petroleum is working out plans to store about 8,000,000 cubic feet of gas daily in the old South Mountain field in Ventura county. The South Mountain field was discovered by the Santa Paula Oil Co., in 1926, but this company was later taken over by the California Petroleum Corp. The wells range in depth from 3000 to 4000 feet and produce 26 gravity oil. Daily average production of the field at this time is slightly better than 4000 barrels from 78 wells. During the life of the field it has produced a total of 11,750,000 barrels. There are no wells drilling there now.

The pinching-in process at Ventura Avenue field was put into effect last week and the process is holding back approximately 60,000,000 cubic feet of gas a day. This experiment is not working out exactly according to prearranged plans. A number of wells with a high gas-oil ratio were selected to be pinched back.

The plan is working fine with reference to these particular wells, but it has been found that several other wells not touched are showing a considerable increase in gas production. The pinching-in process may be extended to these wells.

Some disposition of around 100,000,000 cubic feet of gas daily will have to be made at Ventura Avenue during the spring and summer. Two of the recently completed wells in this field are making a total of 6,500,000 cubic feet of gas daily and at least two wells will be completed each month, for some time. New gas production is greater than the natural decline.

Production at Long Beach To Take Upturn

LOS ANGELES, March 24

SEVEN new wells were completed at Long Beach the past week, averaging close to 2000 barrels each, and 200 wells are drilling in the field, 54 of which were drilling below 6000 feet early in the week.

Of the 200 drilling wells, 109 are being drilled by six companies, leaving 91 wells to be distributed among 64 companies, as there are 70 active companies in the field.

Due to the large number drilling below 6000 feet, there should be frequent completions the coming few weeks. A new high production figure of 150,000 to 175,000 barrels may be reached in April or May. Practically all new wells are taking in more than a 1000 feet of oil bearing formation and most of them are holding up fairly well.

Shell Company is leading all other operators with 32 wells drilling, 11 rigs and 4 locations, Richfield is second with 25 drilling wells, while California Petroleum is third with 17 active strings of tool and Pan American comes next with 15 drilling wells. Getty is drilling 11 holes and General Petroleum is drilling 9.

Ventura Avenue registered two new wells the past ten days, adding about 5000 barrels of new production, and largely offsetting the pinched-in program. A number of wells are drilling with indications that two more wells will be completed in the next week or ten days.

This may bring the production of the field back to the point where it was when the wells were pinched. The new wells are adding considerable gas to the present output, and it now appears that other steps will have to be taken to reduce the production of gas in the field to a point where there will not be much excess.

The outstanding development of the week was the completion of the E. J. Miley No. 3 well at Rinch at 3099 feet for nearly 1500 barrels of 31 gravity pipe line oil. This is the first completion in the second sand at Rincon, the new field in Ventura County.

The well started out making 1,000,000 cubic feet of gas, with a natural gasoline content of about 2 gallons, and late in the week was averaging around 1100 barrels of oil, still clean. The well had 28 feet of oil bearing formation.

Eighteen other wells are drilling in the new field with five wells on production. Several of the drilling wells are below 2600 feet and naturally they will try to develop this second sand. No deep test has yet been drilled to greater depths in search of still deeper sands.

Field activities in most of the older fields in state are slowing down.

The Editors' Viewpoint

National Petroleum News

A Policy Worth Keeping

THE Mid-Continent Oil & Gas Association, having called a general meeting to plan for the elimination of all unnecessary drilling, forcibly indicates the vigor of the efforts now being made to rationalize production.

Expressions from leaders of the industry show that nothing short of the wholehearted cooperation of everyone in the industry will enable the industry to regain a true economic position.

The Mid-Continent association has taken a step in the direction of a more rational policy of discovery and development. That step was taken through Seminole district operators setting up the plan for cooperatively testing a large territory. That effort should not be allowed to expire with the passing of the moment's exigency. It would be a fine thing to provide for a permanent umpire—whose title might be something else—who would keep planning ahead for the cooperative testing, by pooling agreements or otherwise, of all territory. The practical point of such a plan lies in the saving of capital expenditure.

What has been started in the Little River territory, where 10 test wells have been started on the principle of partial reimbursement of the operators who drill them in the event dry holes are drilled, can well become standard policy in the oil industry. Many areas that have been drilled within the past year would have shown far less operating losses had such a plan been in effect. —L. E. S.

Individual Initiative

WHEN a politician discusses economics and events in industry the result is generally funny, or would be if there were not people who still take what a politician says seriously.

Senator Willis, spellbinding in Ohio in the primary campaign for Republican convention delegates, looks upon the development of chain stores and the standardization movement as inimical to the human race.

He is hitting at Secretary of Commerce Hoover, his opponent in the contest in Ohio. Hoover has sponsored the standardization movement. How Willis ties Hoover up to favoring the chain store, as against the individually owned store, is hard to figure out in his speeches, or anywhere else, for that matter. Anyhow, here is where Willis inferentially brings the indictment against Hoover to a head.

"Chain stores are having their effect upon the small business man. There is no longer the incentive for the young man to enter business for himself, because, if he does, he is soon brought face to face with a condition in which he is compelled to face business destruction, or else sell out to the chain stores.

"The fact is, under the Chain System that is obtained generally, the great middle class of our people faces all the time greater difficulties in maintaining its independent existence.

"It may be said that efficiency is promoted and economic waste curtailed by having everything standardized—all doors the same size; all threads the same angle; all containers the same capacity. The question arises, however, if the world is to be standardized and reduced to the chain system, whether there is still the same encouragement for individual initiative and progress."

The oil industry, the producing branch, has seen very tangible benefits from standardization of its field equipment. Money has been saved the oil companies, and will be saved to the companies manufacturing the equipment, through elimination of odd sizes and special material. Field stocks are reduced and interchangeability of standard parts secured.

Individual initiative, in place of being restricted, is being given greater opportunity to work out entirely new ideas. There has never been such progress in oil production engineering as the past year, with the standardization movement in stronger vogue than ever before.

He must indeed be blind, who has seen the radio industry, for example, grow from nothing into a great industry in a few short years, and still believe the present age does not offer encouragement to individual progress. The opportunities may not be in the same direction as a generation ago; but chain stores and standardization and every other expression of the trend of industry today is creating opportunity for the individual, not stifling it. —V. B. G.

Cooperative Economics

WITH pleas being heard on all sides for cooperation in the oil industry, it is refreshing to note the progress made along this line by one organization the Petroleum Motor Transport Association. It is made up of the heads of the truck divisions of many of the larger producing companies.

The association has forged ahead the past year, accomplishing much, and, what is more important, learning how much can be accomplished by organized effort.

Under the banner of cooperation the truck drivers of the various companies unite to help each other out of road trouble, lending time and effort free of cost. A united effort to solve the trying problems of "boom" traffic and "boom" roads has resulted in greatly improved conditions.

The value in dollars and cents of such cooperation between departments of oil companies whose problems are the same has been amply demonstrated. The solution of many of the difficulties confronting the industry today lies in just such cooperative economies.—J. P.

Times like these test the earning capacity of every refiner's equipment

When gasoline was fetching a nice price almost any cracking process—even skimming processes and pipe stills—may have been adequate

Now, only that process which delivers marketable gasoline at lowest cost with other good marketable by-products can be of any real help and then only if the cost of gasoline is less than when produced by distilling or skimming crude

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Refiner Adds a Lesson in Mathematics To Discussion on Profits

An Open Letter from G. C. Davison

President Tri-State Refining Co., Kenova, W. Va.

To the Editor:

As the head of a small refinery, I have read your message entitled, "Profits for 1928 Entirely Up to You".

You are absolutely right.

As an individual I am sure I understand you; but, as the head of a corporation engaged in the refining business, I fear that, like many others, my thinking ability has been very limited.

For example:

If John Smith Refining Co. has a gross margin per barrel of 28 cents, and his costs per barrel are 35 cents, when running X barrels per day, his corporate brains tell him he is losing seven cents per barrel. The first thought is to correct this by reducing costs; but, after going over the organization with a fine-tooth comb, he finds that he has already reduced costs to the lowest practical limit.

He looks on the open market price as something made by somebody else, a bunch of nit wits out in the Mid-Continent, we will say. He believes he has nothing to do with such ridiculous prices as five and three-quarters cents per gallon for gasoline, and blames every other refiner from the Atlantic to the Pacific Coast. His corporation brains tell him that, if he keeps on this way, it is only a question of time before he will be broke, and his corporation existence ended.

So his corporation brain gets busy and solves the problem this way:

Since he has already reduced his expenditures to the limit, and since he has no control over the open market, what can he do about this bad situation? Investigation and calculations show him that, by increasing his throughput, with very little increase in expenses, he can bring his unit costs down to 25 cents per barrel, which will leave him a net profit of two cents per barrel.

So he deliberately goes to work and does this very thing.

It works out exactly as planned—in fact a little better, and he makes temporarily, the munificent profit of two and a quarter cents per barrel. In doing so he is vaguely conscious that he has put an extra supply of gasoline on a market which was already glutted.

But his corporation brain hopes the market is so low it can not go lower, or if it does, it will eliminate some other fellow less efficient, or less favorably situated; so that, in time, he, John Smith Refining Co. will be numbered among the "fittest", who survived.

The foregoing is, of course, only an imaginary example. I am not stating that any company actually did exactly that.

Judging by supply and demand figures, and the market, it looks very much as though a lot of refiners have been governed more or less by such a stupid process of reasoning, namely decrease unit costs by increasing output, and let supply and demand and market price take care of themselves.

There must, of course, be a reason for the stupid behavior of the industry during the past several years. In order to be definite and specific, the word industry is here limited to the refining industry. There is much to be said about the producing and marketing industries, and they are all closely related and inter-related. But the refining industry is also a very definite entity, and can be treated alone.

It is doubtful if there ever was an industry that enjoyed better opportunities, and made less use of them. It has a market for its products which has been increasing year after year. In 1917 U. S. gasoline consumption was less than three billion gallons. In 1927 it was nearly thirteen billion gallons, or over four times as much. This ever increasing demand was made by another industry, and handed over to the refiners, gratis. Add to this the fact that the refining industry has had it in its power to control its output.

What other industry could so easily predetermine what its output should be, and control it accordingly?

It is merely a case of giving orders to the refinery superintendent as to how many barrels to run each day or each month.

The producer of crude oil is at the mercy of many factors beyond his control. The producers of wheat, corn, cotton, sugar and many other commodities have to face the uncertainties of the weather and of insects, and necessarily at times must produce an over supply, resulting in low prices, in order to produce an adequate supply on the average. Even the cotton planters, with all the uncertain and uncontrollable factors with which they have to contend, voluntarily decrease or increase their acreage from year to year in accordance with supply and demand.

Biologists tell us the human individual is made up of 25,000 billion living cells. According to them, each of these cells is a living entity, but

"PROFITS for 1928 entirely up to you" was the subject of an editorial by the writer in our February 8, 1928, issue (page 20).

This editorial said that, if each oil company would control its output and facilities, whether a producer, refiner or marketer, so that it would not oversupply the natural market, the industry would most certainly have good profits.

A number of comments were received but Mr. Davison's, given here, were so exceptionally to the point we are giving them in full.

Mr. Davison is not only an oil man with interests in West Virginia, but a business man and an old Navy man.

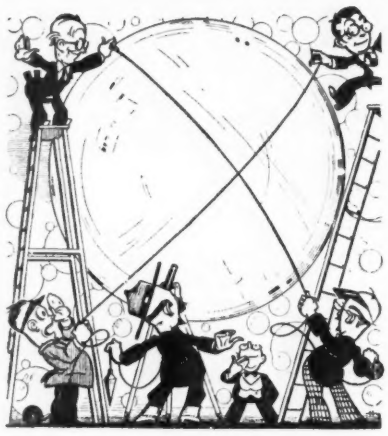
Despite his oil training the rules of logic come easy to him, and the obvious thing to do is still quite apparent.

Each oil company, if each will act in sane business fashion, can easily make this and every other year reasonably profitable.

But unintelligent ambitions must be repressed.

WARREN C. PLATT, *Editor.*

Billions of Bubbles



The Amazing Measurement of a Bubble

NATURAL Gasoline Producers are agreed that the greater the intimacy between gas and absorption oil the greater the extraction.

So let's, for a moment, consider the computation of film area exposed in a Campbell Oil-Froth Absorber. It's really amazing.

It is estimated that the majority of Campbell bubbles composing the oil-froth are $\frac{1}{32}$" in diamater. Assume however that they average as large as $\frac{1}{16}$".

By simple computation then, there are, theoretically, 4,096 bubbles per cubic inch; 7,077,888 per cubic foot; 1,801,464,053 per Absorber —or 31,000,000,000,000 per day—"Billions of Bubbles!"

And each cubic foot of Oil-Froth exposes 603 square feet of oil film or 153,475 square feet per Absorber.

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BROWN SHEET IRON & STEEL CO.

St. Paul Minnesota

so perfectly organized that each does its part in the makeup of a man. They tell us that the system of nerves in one human body is highly organized, that, if all the telephone lines and centrals in all the world were organized in one system, this system would be relatively simple compared to the nervous system of a single human individual.

So I have the highest respect and admiration for the intelligence of the individual men who make up the refining industry, even though that industry as a whole acts as though it has no brains.

After the individual, comes the corporation, composed of numerous individuals. As an organization, even the largest corporation is very crude and simple in comparison with the individual. As for intelligence, judging by its actions, one could conclude that it is far less intelligent than any of the units of which it is composed.

Last of all comes the industry, composed of about 322 refining companies. Since the industry has no organization, one might say it has no intelligence. Judging by its action as a whole such a conclusion would seem amply justified.

So any message sent to the industry as a whole is entirely wasted under present conditions. Without some kind of organization, the industry has no senses with which to receive a message, and no means of acting even if it had such senses.

It is true we have some scattered trade organization or associations. But they are more or less local in character, and, while some of them have done some good, they have not thus far succeeded in instilling any intelligence into the industry as a whole.

Thus, we have first, the individual with plenty of intelligence, second, the corporation with a kind of intelligence, and third, the industry as a whole with no intelligence or even consciousness.

So far as the individual is concerned, we are fairly civilized. But the corporation still seems to be governed by the law of the jungle. Unthinking greed, and no consideration for the other corporation, or for the industry as a whole, causes the corporations to plunge blindly on their way to ruin or poverty.

The primitive law of the survival of the fittest, seems to be about the only one that governs. Of course, some will survive, but in doing so they will suffer needlessly.

We hear much talk about the service of the industry to the public.

But does the public appreciate or admire service that produces more gasoline than it needs, and sells it below cost?

Will the public show any appreciation of such fool service when, later on, the corporations need more financing and try to sell stocks and bonds

to repair the damage they are now doing themselves?

One part of the public, at least, can express its opinion. If we judge by present quotations of listed refining securities, that opinion is a very poor one.

There surely must be some way to awaken in the corporations some sense of duty to the industry as a whole. Your message above referred to, is one way. But conditions are such it will have to be written in big plain letters, over and over again.

The individuals already fully appreciate and understand it. But the corporate brain seems to be rather slow and primitive.

Hammer away until the corporations develop some thought for the industry as a whole, until each one realizes that he has a conscience and a duty, and that it is up to him to regulate his runs, and do his bit toward keeping the supply within reasonable bounds.

Teach the corporation how to solve his equation of, unit price minus unit cost equals unit profit. He has been ignoring the first term, and reducing the second by increasing supply. However, when price is determined by supply, he is getting himself into a worse condition right along.

If each refiner could focus his attention on the first term, price, and regulate it by controlling his supply, there would be no vicious circle. His cost might be temporarily affected. But it would be only for a short period, as price would adjust itself very quickly, and the answer he is seeking, namely profit, will soon appear.

If the corporation brains ever knew anything about simple mathematics the following little equation might be interesting:

Call X unit price per barrel.
Call Y unit cost per barrel.
Call P unit profit per barrel.
Call Z excess supply.

Then it is evident that: l—x—y= p—x. We want p to be plus instead of minus, and as large as possible, within reason.

We know that, according to the law of supply and demand, x, the price, varies inversely as some function of the supply. The greater the supply over demand, the smaller will be the price. So we can write:

$$2 - x = \frac{a}{f' z}$$

The corporation brain also seems to know that the greater the supply he turns out, the smaller will be his unit cost, so we can write:

$$3 - y = \frac{b}{f'' z}$$

Substituting (2) and (3) in (1) we have:

$$4 - \frac{a}{f' z} - \frac{b}{f'' z} = p$$

$$a f'' z - b f'' z = f' z f'' z p$$

$$\text{or } p = \frac{a f' z - b f'' z}{f' z f'' z}$$

For the sake of simplicity assume that f' and f'' are linear or unity.

$$\text{Then } p = \frac{a z - b z}{z^2} = \frac{a - b}{z}$$

Nobody seems to know exactly the mathematical expression for the working of the law of supply and demand, but in practice it is much more than the simple equation about given, namely:

$$p = \frac{a - b}{z}$$

So, when the refiner reduces his costs by adding to the supply, he is not increasing his profits. On the other hand is decreasing them. Thus, if, in the aggregate, refiners double the excess supply, they divide their profits by 2. The individual refiner who reduces his unit costs by adding to the surplus supply, will, in spite of himself have his profits reduced along with those of everyone else.

The foregoing mathematics are simple but sound, and is only another way of expressing what you have said.

You are welcome to publish these equations, and in the meantime I trust you will keep up the good work you have started.

Auto Output is Larger Than Year Ago

NEW YORK, March 24.—*Automotive Industries* this week said:

Automobile production for the first quarter of the year will show a fair gain over production in the first quarter last year, according to all present indications. This will be achieved despite the fact that Ford Motor Co. production in the first quarter will represent only a small percentage of the cars built by this company in the first quarter of 1927.

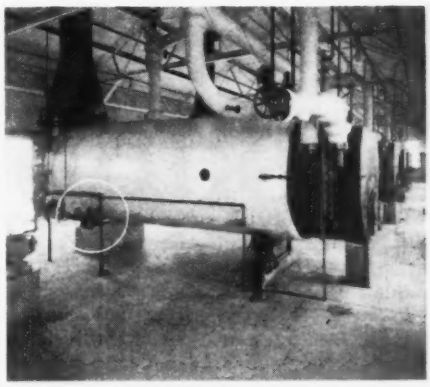
The retail situation throughout the country has generally improved and there is a large demand for immediate deliveries. This is keeping down any unwieldy accumulation of cars due to factory production exceeding retail sales at this early stage of the spring selling season. Used car movement likewise has been greatly improved creating far better conditions for new car selling.

Production of cars and trucks in February totaled 335,872 as against 323,418 in February, 1927.

CLEVELAND, March 24.—H. H. Fleming, vice president and general manager of the Oil Conservation Engineering Co., makers of Oceco tank fittings and specialties, left Cleveland March 23 for a three weeks trip through the oil producing and refining centers of north and Gulf costal Texas and California.

NIAGARA METER TRAVELS

No. 11
Seminole, Okla.



New Sinclair Plant is Buffalo Meter Equipped Throughout!

THE new natural gasoline plant of the Sinclair Oil and Gas Company, which has just recently been put into operation at Seminole, Oklahoma, is considered to be the largest of its kind in the world, and is noted for its advanced design and its efficiency in operation

The installation of Niagara 1" DV type hot water meters on the five boilers shown above are used for measuring boiler feed water. This is but one of the many departments where Niagara Meters are in daily use, giving accurate and dependable measurements on liquid flows.

A Type and Size for Every Need!

Whatever your requirements may be, and whatever branch of the Petroleum Industry you may be in, there are types and sizes of Niagara Oil Meters that will give you *accurate* and *dependable* measurements on any liquid. Niagara Oil Meters are available in sizes ranging from ½ inch to 6 inches, with capacities ranging from 2 to 300 gallons per hour to 10,000-40,000 gallons per hour.

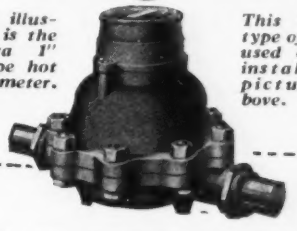
Mail the coupon for illustrated booklet and price list.

BUFFALO METER COMPANY
2889 Main Street, Buffalo, N. Y

The Representative for Niagara Oil Meters in Oklahoma and Northern Texas is the REFINING SUPPLY COMPANY with offices in Tulsa and Dallas.

Niagara Oil Meters

Meter illustrated is the Niagara 1" DV type hot water meter.



This is the type of meter used on the installation pictured above.

Buffalo Meter Co., 2889 Main Street, Buffalo N. Y.

Please send us a copy of your Niagara Oil Meter Catalogue and price list.

Name.....

Type of Business.....

Address.....

.....

Cost Finding Methods for Marketers And How to Use Them

Article 3—Chart of Accounts and Its Functions

By Frank H. Emig

IN PREVIOUS articles have been explained and shown forms for the selling units to report their sales, stock and cash transactions on. After these are received and checked as to accuracy at the main office it is next necessary to collect this daily data for each selling unit in a systematic method so that too much work will not fall upon the office force all at one time at the close of the month.

Forms (Fig. 5 & 6) in Article 2 (see Page 52 March 21 issue) show how this is accomplished on a monthly Sales & Stock Summary Sheet, each day's report being posted daily after checking to this sheet, showing totals for each unit opposite the date for which it applies. These forms can be secured from most stationery stores or if they do not have them they may get the forms for you from their supply houses. This particular sheet is known as a 30-column double page sheet with name space. It is the closest to what is most desirable in a ready made form.

Of course similar sheets could be made to your individual order but for a very nominal amount of work at the beginning of each month in writing in the headings considerable saving can be made by the use of a stock form over made-to-order ones. The name space on the original sheet has been ruled and utilized for additional columns, which are explained as follows:

These sheets should be self balancing, which serves as an added check on the accuracy of every daily report posted thereon. Therefore we use the first column for Total Sales (See Fig. 5) which is both the Total Debits, which consists of Cash, Coupons, Returns and Allowances, Discounts, Credit Sales, etc. These items record the values which you receive for the values you dispense in merchandise (Sales).

By adding all these debits together and subtracting the collections, or credits to Accounts Receivable the result should equal the amount shown as Total Sales in the first column.

Then add the amounts received for your various products sold as shown by the distribution of sales and it too should also show the amount shown as Total Sales. If these two procedures both agree with the Total Sales figure, then your summary for one day's business or the aggregate for the month is positively correct.

One column of the Sales Summary (See Fig. 5 Page 52, N. P. N. for March 21) under each product classification records gallonage for sales information, and the other under the same classification shows the amount received for the gallonage or pounds sold. This method not only affords accurate record of all cash transaction but collects several other forms of necessary controling data at the same time and in the same place.

Fig. 6 (Page 52, N. P. N. for March 21) provides several spaces for sales and also columns for the posting of stock received by the selling unit both as to quantities and costs. When these amounts are totaled at the end of each month and the opening and closing inventories applied, it will show you the actual amount dispensed by the selling unit which should correspond with the total shown as sales of each particular commodity and also the cost of the quantity that was dispensed.

Then you can readily see there have been really accomplished with accuracy four major functions in one operation and all in the same place namely: proven the accuracy of all cash items and debit entries; collected sales information; accomplished inventory control, and obtained costs of goods sold to be used in determining the gross profit for the selling unit.

By following through the transactions recorded it will assist in making the procedure clear to most readers, particularly one familiar with the rudiments of bookkeeping.

One point which may be confusing but should not cause much trouble if properly considered, is where to obtain the charges to each unit's stock. These may come from the voucher register or invoice register, as you may term it, or from the truck drivers' daily reports, either from sales or transfers to stations, depending on which system of charging your stations is used.

ARTHUR KNAPP

Mr. Knapp is vice-chairman for economics of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, elected at the New York meeting Feb. 22 to 23. He is petroleum engineer with the United Gas Improvement Co., Philadelphia

CERTAINLY one of your own stations is entitled to at least a reasonable amount of the gross profit which would be given to a dealer under a quantity discount arrangement. A number of companies with which the writer is familiar, charge their own stations 3 cents under the retail price of gasolines sold, and establish a suitable wholesale price for oils and greases somewhere in line with the average price of the same product to dealers.

When handling such transfers—which they really are—to your own stations your truck driver need not price the tickets. He may merely show the quantities delivered and the ticket signed by the person who received the goods: The quantities are charged to the stations daily on their own stock and sales sheet and the total of such quantities can be figured at the end of each month. The aggregate of such transfers to all stations for the entire month will be credited in a special sales account, termed Station Deliveries, Station Transfers or some such name, and the cost of the goods so transferred can be included in the cost of goods sold from the particular bulk plant or warehouse from which it was transferred, or charged to a separate account named Cost of Goods Trans-

Limited Output

and what it means to

Independent Jobbers

CO-RE-CO PENNSYLECT MOTOR OILS
From
100% Pennsylvania Grade Crude

No oil is any better than the crude from which it is made

Limited for a purpose

To refine a super Quality of 100% Pennsylvania Motor Oils above the average. Extraordinary oils that will hold your price—hold your customers—and actually build new and solid business for your stations.

43 Years of Square Dealing

Since 1885 this refinery has applied rigid and specialized standards of production to the particularly high grade of Pennsylvania crude on which we run. A daily output purposely limited to maintain a super-standard of quality and excellence.

CORECO affords a profitable business building opportunity for the independent jobber and our CORECO exclusive territory contract is as attractive as are the specifications of our Superior Pennsylvania Motor Oils.

CORECO distribution is available to independent jobbers and distributors only. Attractive territories for exclusive distribution are still open in some very productive districts, which will be granted to reliable jobbers.

Write our Main Office for further details

CO-RE-CO

Guaranteed 100% PURE PENNSYLVANIA OIL

PENNSYLECT MOTOR OILS

Guaranteed 100% PURE PENNSYLVANIA OIL

CONTINENTAL REFINING CO. - OIL CITY, PA.

ferred, which application will be shown in future articles.

If this procedure is followed it will afford the oil company executive information as to the separate wholesale profit deriven from the goods transferred to his own station.

There still is or should be under normal conditions, a wholesale profit in these transfers which the wholesale selling unit is entitled to show. If you transfer at cost then it is necessary to charge each unit in expense classification for trucking, warehousing, overhead, etc., which is sometimes difficult to determine accurately.

It seems reasonable to assume that your bulk plant is entitled to at least the maximum profit which would be derived from the same goods if the goods were moved to dealers and you did not have the expense of distribution at the stations.

In case any charges for merchandise to any particular service station should be run through the voucher or invoice register then the posting to the stock sheet is done direct from the invoice. This procedure will be explained more fully later when make up of other records and a classification of accounts are considered.

A summary sheet showing the monthly totals only for each selling unit, that is, the aggregate totals of all total sales, cash, etc., gallons of gasoline, etc., costs of goods sold for all selling units, forms the basis and figures for your monthly closing entries or rather posting entries for the entire month's activities in so far as income and costs are concerned.

Every business system should be operated in accordance with a prearranged Chart of Accounts. A Chart of Accounts is nothing more or less than a systematic arrangement of suitable accounts to reflect the condition of and the activities from period to period of the business.

The accounts are serially numbered in the classification. The numbers merely serve the bookkeeper with a concise and less voluminous method of marking and identifying items as they are being carried through the records. It enables him to conserve space in all books of record by the use of controlling account columns in the books of original entry. Otherwise, writing the account name for the item every time an entry intended for that particular account is entered in the books, would be necessary. Furthermore it permits of a more detailed classification by department and units of each department without having such detail becoming voluminous and cumbersome.

A classification of accounts consists principally of four groups: 1 Assets; 2, Liabilities and Net Worth; 3 Income, and 4 Expense. These groups can be subdivided but they are the basic or main groups for financial statements. The first two comprise the balance sheet and the last two the income-profit and loss statement. In the Chart of Accounts given (Fig. 7) no attempt has been made to cover any particular arrangement or names of accounts. It is merely a sample showing plenty of room for expansion in case any new accounts should be desired at a later date.

In any Chart of Accounts numerical arrangement should be followed so as to allow space for future expansion or elaboration of the classification, particularly between each major groups, because numerical arrangement aids materially in making up

CHART OF ACCOUNTS—Fig. 7

ASSETS

Acct. No. — Acct. Name

1. Petty Cash Funds
2. Cash on Hand (General)
3. Cash in Bank (Use Name)
4. (Another Bank—if any)
5. Accounts Receivable
6. (Space reserved)
7. Notes Receivable
8.
9.
10. Merchandise Inventory (Bulk Plants)
11. Merchandise Inventory (Service Stations)
12.
13.
14. Land
15. Miscellaneous Buildings
16. Bulk Plant Tanks
17. Service Station Pumps and Tanks and Equipment
18. Autos & Trucks
19. Miscellaneous Equipment
20. Office Furniture & Fixtures
21. Service Station Building
22. (These for other
23. Service Station Building
24. Investments an account
25. for each station by
26. Number.)
27. Prepaid Insurance
28. Prepaid Rent, Taxes, Etc.
29. Prepaid Supplies & Expense

LIABILITIES AND NET WORTH

30. Notes Payable
31. Accounts Payable
32. Trade Acceptances Payable
33. State Tax Payable
34. Outstanding Trade Coupons
35. Accrued Taxes Payable
36. Accrued Interest Payable
37. Accrued Payroll
38.
39.
40. Reserve for Depreciation
41. Reserve for Doubtful Accounts
42. Capital Stock Issued
43. Profit and Loss (Surplus) Acct.
44. (Rest of the number to 50 reserved for any other necessary accounts.)

INCOME ACCOUNTS

Acct. No. — Acct. Name

50. Wholesale Sales
51. Service Station Sales
52. Service Station Transfers
53.
54.
55. Interest and Discount Earned
56.
57.
58. Returns and Allowances (Wholesale)
59. Returns and Allowances (Retail)

EXPENSE ACCOUNTS

60. Cost of Goods Sold (Wholesale)
61. Cost of Goods Sold (Retail)
62. Cost of Goods Transferred
63.
64.
65. Interest Expense
66.
67.
68.
69.
70. Direct Wholesale Expense Controlling Account. (See detail expense classification for the subsidiary accounts under this control)
80. Direct Retail (Service Station) Expense Control (See detail accounts as under the above)
90. Sales and Administrative Expense Control. (See detail accounts under this control as above)

Subsidiary Account Classification for Items 70, 80 and 90

70. DIRECT WHOLESALE EXPENSE CONTROLLING ACCOUNT.
- 701. Agents & Drivers Salary & Commissions
- 702. Repairs to Building & Equipment
- 703. Repairs to Autos & Trucks
- 704. Rent or Lease Expense
- 705. Heat, Light & Power
- 706. Insurance, Taxes & License Fees.
- 707. Telephone, Telegraph & Miscellaneous Expense.
- 708. Depreciation Expense
- 709. Freight, Express & Cartage (Misc. Items not charged to Merchandice.)
- 710. Demurrage.
- 711. (From here on any accounts may be added as needed or necessary as 100 account numbers are provided under this Control account.)
- 712. Company Use—Gas & Oil

80. DIRECT RETAIL (SERVICE STATION) EXPENSE CONTROLLING ACCOUNT.
- 801. Agents Salary & Commissions
- 802. Repairs to Building & Equipment
- 803. Repairs to Autos
- 804. Rents & Lease Expense
- 805. Heat, Light & Power
- 806. Insurance, Taxes & License Fees
- 807. Telephone, Telegraph & Misc. Expense
- 808. Depreciation Expense
- 809. Freight, Express & Cartage
- 810. Other Labor—(Helpers, etc. Part time Help).
- 811. Advertising (Proportionate Charges)
- 812. Company Use Gas & Oil (Allowable Shortages, Etc.)
- 813. (Continue with any other accounts desired)

90. SALES & ADMINISTRATIVE EXPENSE CONTROLLING ACCOUNT.
- 901. Officers Salaries
- 902. Office Salaries
- 903. Salesman's Salary & Commission
- 904. Office Supplies & Expense
- 905. Legal & Professional Expense
- 906. Heat, Light & Power
- 907. Telephone & Telegraph
- 908. Rent & Lease Expense
- 909. Insurance, Taxes & License Fees.
- 910. Company Car Expense
- 911. Advertising
- 912. Depreciation Expense
- 913. Miscellaneous Expense
- 914. (Continue with any other accounts desired)

the monthly reports. All current assets, current liabilities, fixed assets etc., should be in the same order in the trial balance as they will appear on the balance sheet.

Further office books will be discussed next week, such as Cash Book, Invoice Register, Check Register, and Journal.

We will show you a form on which a small company can record information and make the entries usually made in four books, those just enumerated.

* * *

How to Use the Chart of Accounts

The bookkeeper using any classification of accounts should always bear in mind that the main function of the various accounts is to collect data for the guidance of the management. For this reason it is desired to have reasonably correct comparative figures from month to month. Therefore, regardless of the classification of the accounts used, endeavor to consistantly charge similar items to the same accounts as previously charged.

In posting the books and taking off trial balance at the end of each month, you will use the totals of Accounts 70, 80 and 90 in your trial balance.

The subsidiary accounts give you more detailed information of what the totals of the various control accounts contain. After the books have been posted to accounts up to and including Account 90 and the trial balance of the general ledger obtained, then post the detail under each control account separately and balance such detail with the control total for each expense classification as shown by your general ledger trial balance.

It should be clear that postings to these control accounts in your general ledger will in all probability come from all your books of original entry —such as Cash Book, Check Register, Voucher Register & Journal. Therefore it is necessary that each and every book of original entry have a double column to be used for each of Control Accounts 70, 80 & 90. In the first column of the double column for each expense account control you will post the subsidiary account number and in the second column post the amount charged to it. For example:

No. 70

701)	50.00
)	

No. 80		No. 90	
1801)	50.00	901)	100.00
2801)	50.00	)	

The total of each of the above columns in every book of original entry you use is all that is posted to the general ledger account for that expense control. The subsidiary expense accounts will be posted as per the detail in each controling account column. In the above example the general ledger controling account posting to the three accounts would be No. 70—$50.00, No. 80—$100.00, No. 90—$100.00 (provided, we assume, these are all the entries to these accounts for the month.) Then the subsidiary posting would be Account 701—$50.00, No. 1801—$50.00, No. 2801—$50.00, No. 901—$100.00.

* * *

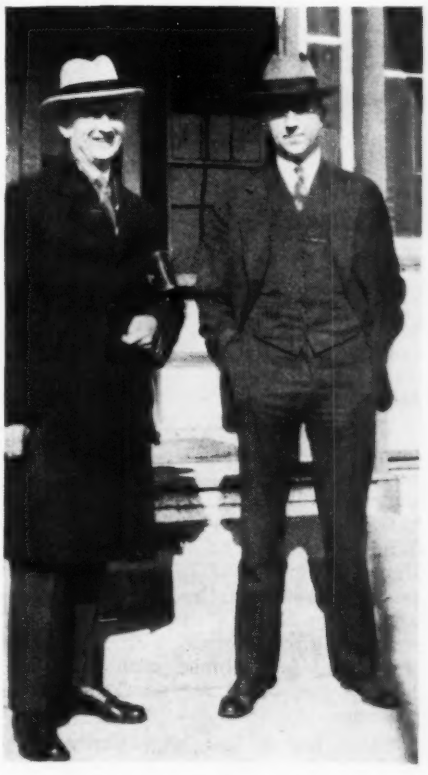
Explanation of the use of subaccounts for *Distribution of Expenses by UNITS.* Number your selling units—which number must not be changed: The accounts given would suffice as is, provided you only have one bulk plant and one service station. However, the same classification of accounts will provide for any number of each if the selling units are serially numbered. For example, you may have two bulk plants and four service stations. With this in mind follow the explanation of expense distribution given below:

Your entry to run a charge through the books for salary and commissions applicable to Bulk Plant No. 1 would be as follows: the account to be charged would be 1701 posted in any book of original entry under Account No. 70—(Bulk Plant Expense Control), because Account No. 701 represents salary and commissions at *any* bulk plant. Prefix this number with the number of the unit receiving the benefit of or causing the expense and it gives the account number for posting to your subsidiary account ledger. Another example would be 2804 posted in the book of original entry under control account No. 80. This account represents rents and lease expense and by prefixing Account No. 804 with 2 makes this rent and lease expense applicable to Service Station No. 2.

The sales and administrative group accounts do not have prefix numbers as expenses classified under this group are *Overhead* expenses applicable to the business as a whole and are applicable against the total net operating profits of all units after taking out the *Direct Expense* of each.

CLEVELAND, O.—The Commonwealth Oil Co., with headquarters here, has just installed a 250,000-gallon storage tank, increasing its storage capacity to over 500,000 gallons. A garage has also been completed recently and two new trucks purchased, according to L. E. Nebel.

Former Carter Official Now in Seminole



On the right is Arthur V. Hoenig, vice-president, Indian Territory Illuminating Oil Co. Left, Charles N. Kimball, Sistersville, W. Va.

TULSA, March 24.—Arthur V. Hoenig, widely known among Eastern operators, now is to be found in the Bowlegs pool of the Seminole district.

As vice president and director of the Indian Territory Illuminating Oil Co., he maintains offices in the famous Walker camp of the company.

Mr. Hoenig was a vice president of the Carter Oil Co., having charge of that company's production in Eastern fields. He maintained offices in Parkersburg, W. Va. From there he went to Pittsburgh, when the Carter's producing activities in Eastern territory were consolidated with those of other Standard of New Jersey subsidiaries. He left the Standard service to operate the former Carter properties in Kentucky, which he purchased.

Coming to Oklahoma last summer, Mr. Hoenig assumed charge of the I. T. I. O.'s production in the Seminole district and recently was made vice president and director.

The accompanying picture shows Mr. Hoenig (right) with Charles N. Kimball, of Sistersville, W. Va., prominent attorney who is identified with the E. A. Durham oil interests. Mr. Kimball recently visited Mr. Hoenig at the Walker camp, where this picture was taken.

Three Pressures May be Used at Once In Wichita Absorption Plant

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, March 23

THE Empire Oil & Refining Co. is completing a modern, high pressure, gasoline absorption plant just south of Wichita, to process gas being transported from the Texas Panhandle to Kansas City and other consuming centers.

The plant is designed to handle 70,000,000 cubic feet of gas per day, but could be expanded quickly to process 100,000,000 cubic feet per day.

Gas for the plant is brought to Wichita through a new 20-inch pipe line. From the Wichita station the gas is boosted to the city of Wichita and on to Kansas City. The booster station in connection with the gasoline plant is equipped with four 500-horsepower, tandem type Cooper compressors.

Thus far it has been unnecessary to use the compressors except for short periods during extreme cold snaps. Since the first of the year, when gas first was turned into the line, rock pressure of the producing gas wells has been sufficient to deliver the gas at the Wichita station under a pressure of 190 to 275 pounds per square inch. When the volume of gas passing through the line approaches its capacity it is expected it will be necessary to operate the compressor plant continuously.

The gas being processed comes from dry gas fields and shows no gasoline content when tested by ordinary physical test machines. It is being passed through the absorbers at high pressures to avoid dissipating rock pressure in the line, thus necessitating recompression to deliver the gas to consumers.

The plant is equipped with 14 absorbers 30 inches in diameter and 41 feet tall. Connections with gas mains have been provided for five additional absorbers if needed in the future. Absorber shells are designed to operate at a maximum of 350 pounds, which is well above any expected pressure conditions.

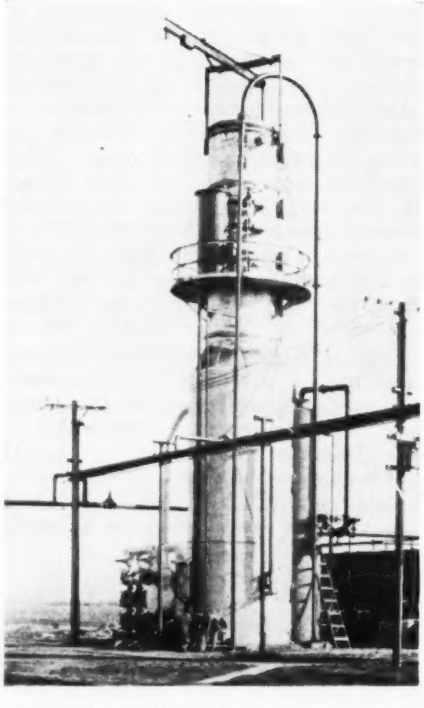
It was decided to use a large number of small diameter absorbers, rather than a few of large diameter, to insure greater safety. Construction engineers of the Doherty interests feel there is less danger of a small tower failing at high pressures.

The absorbers are filled with spiral crock tiles. This type of baffling material was selected, after considerable research in high pressure absorption work, to give maximum contact between gas and mineral seal oil with a minimum pressure drop through the absorber.

An interesting feature of the tower installation is the fact that various operating pressures may be utilized simultaneously. Part of the gas goes to Wichita for consumption, while the remainder goes on in the Kansas City mains. Gas for Wichita need not leave the plant at more than 80 pounds pressure, while gas for Kansas City must be under much higher pressure.

TO PROVIDE for these differentials, the absorber system has been arranged so that five absorbers may be used on low pressure gas, four on high pressure gas and five on either high or low pressure gas. Manifolding is such that three pressures may be used at the same time.

The use of three pressures may be desirable later, if the Doherty interests build a new line from Wichita to Kansas City direct, to supplement the present lines through Cambridge, Kans., connecting with the Oklahoma main line at the Petrolia station.



Vertical steam still and knock out tower at Empire plant. Water and gasoline separating trap is above walkway around knockout tower

The new gasoline plant near Wichita has been built at the intersection of the Empire line from Texas with the line from northern Oklahoma and southern Kansas. These lines intersect in the Arkansas river valley, where there is very sandy soil and a shallow sub-surface water level. The plant site is subject to overflow from the Arkansas in flood season.

Rather than build the plant on the valley escarpment above high water, several miles from the present site, and be forced to make extensive line changes, it was determined to build up the plant ground level above high water.

To provide proper stability for all moving machinery and the boiler plant it was found necessary to sink piles before putting in concrete footings.

All tanks and equipment were placed in high concrete footings and sand and earth has been added to establish a new ground level. This has required moving 65,000 cubic yards of sand and earth. A dredge was used, pumping sand out of a made lake onto the site. The lake is now 20 feet deep.

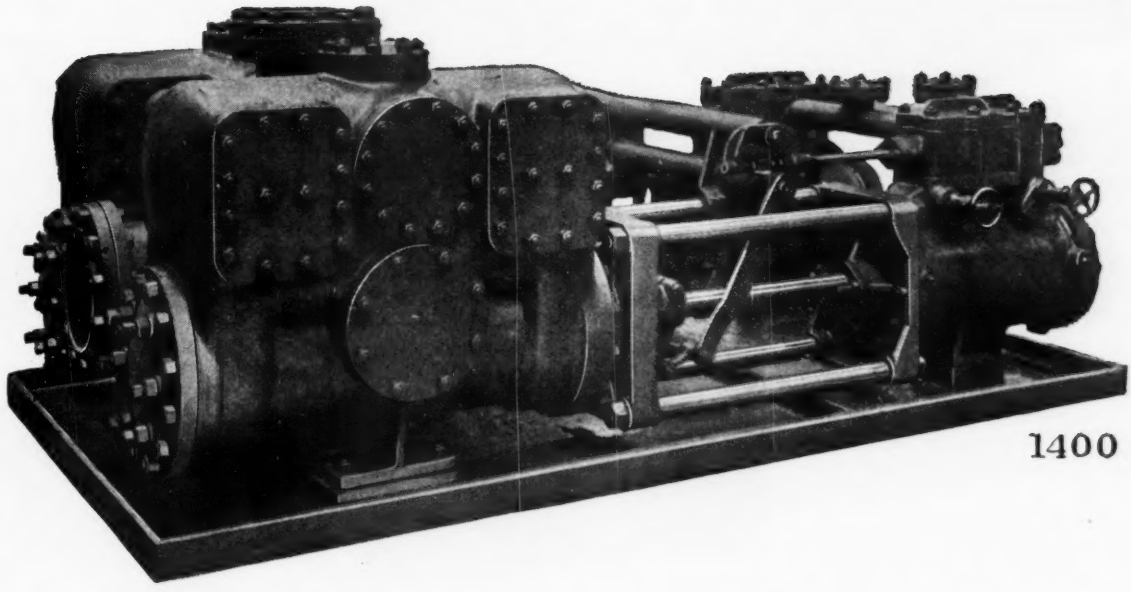
The shallow depth at which an abundant supply of cooling water is found brings about an unusual plant situation. Three wells have been dug on the site. Each is 48 feet deep and 30 inches in diameter. Rotary pumps were installed at the bottom of the wells. One well delivered 1200 gallons per minute, another 1000 gallons per minute and the third 900 gallons per minute.

COOLING water is used only once on account of its abundance. The hot water from coils, engine jackets and elsewhere is allowed to drop into the late. All make up water comes direct from the wells at the unusually low temperature of 51 degrees Fahr.

The Fluor cooling tower, as illustrated in the accompanying photograph, is one of the lowest in use, being only three louvers high. Top of the distributing system is only about 10 feet above the ground level. The tower is equipped with Griscom Russell bent tube sections.

An interesting feature of the plant

TRANSIT
Pumping Out Pumps



1400

PUMPING out pumps are used to remove the tar and residual from various types of oil stills. This can be, and oftentimes is, one of the meanest jobs around a refinery. It requires a special pump to do this work successfully.

TRANSIT Block Valve Pumps have large rectangular valves as large as your feet, but no guards, no stems, no springs, nor separate seats to loosen by reason of the expansion of the fluid end from the hot tar. The valve seats are integral with the fluid cylinder casting. There is no trouble from expansion regardless of the heat of the fluid pumped.

Removing any valve chamber cover gives access to both intake and discharge valve, for inspection or removal.

These pumps are the solution of the pumping out problem, and they are low in price.

Descriptive matter on these pumps on request.

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ASSOCIATED SUPPLY COMPANY
Los Angeles, San Francisco, Bakersfield, Fellows

E. L. WILSON HARDWARE CO.
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NATIONAL TRANSIT
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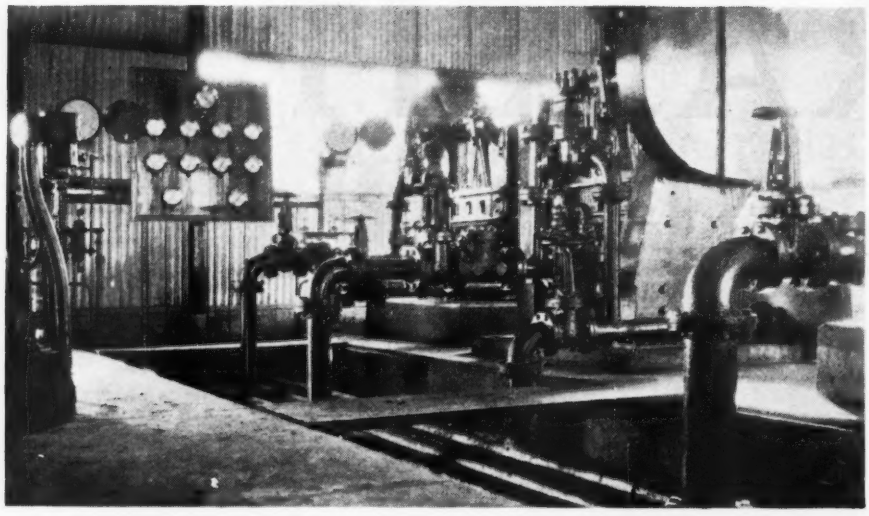


Interior of pump house showing triplex oil circulating pumps

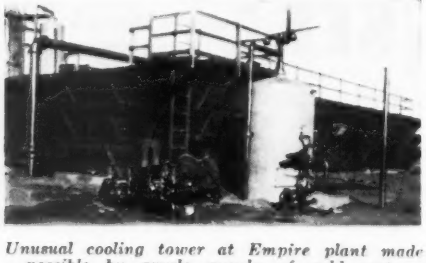
is a specially designed vertical steam still and knockout column built by the Winkler & Koch Engineering Co., Wichita. The still and tower combined are 45 feet in height. The still is 8½ feet in diameter and the knockout tower at the top 6 feet in diameter. The combination contains six stripping decks and eight fractionating decks.

Rich oil from the absorbers is pumped through a series of heat exchangers counter current to the hot denuded oil from the bottom of the still and enters over the top stripping deck. Live steam is injected into the bottom of the tower to drive off gasoline.

Cool water is pumped over the top of the fractionating column at the top of the still as a reflux. The water drops down over two bubble decks to a trap off plate, from which it goes to a separator tank built outside the tower. From this separator any condensed gasoline is trapped back into the still while the water is drawn off with the aid of a Fisher control device.

The condensed oil or gasoline from the separator re-enters the still over the third bubble deck against the gasoline and water vapors rising from the still below. The still was designed to handle an oil circulation of 14,000 barrels per day.

Uncondensed gas from the accumulator tank, after being run through a tail absorber is recompressed and added to the gas stream leaving the plant for Empire domestic and industrial customers. A 160-horsepower, Cooper compressor is used to boost the uncondensed gas into the mains.



Unusual cooling tower at Empire plant made possible by ample supply of cold water

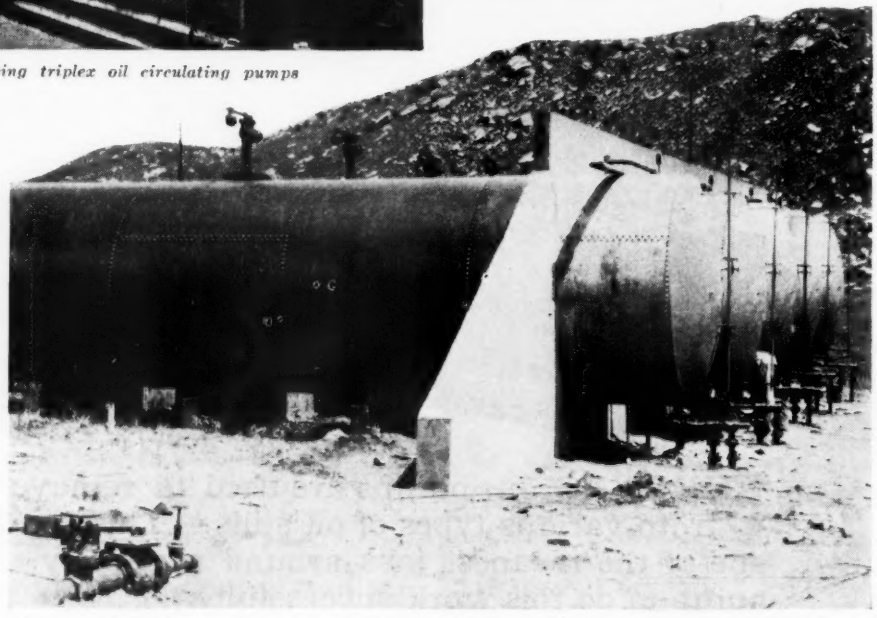
One of the most interesting features of the plant is the provision for underground storage which has been made possible by the invention of a gauging device for pressure storage. By means of the device it is possible to gauge completely buried tanks without venting and this removing pressure.

By completely burying the tanks evaporation losses are reduced to a minimum. The company now has standardized on this type of storage for gasoline plants and abandoned the former practice of building a retaining wall at one end of a battery of tanks so that the ends may be exposed and gauge glasses used to measure the liquid contents.

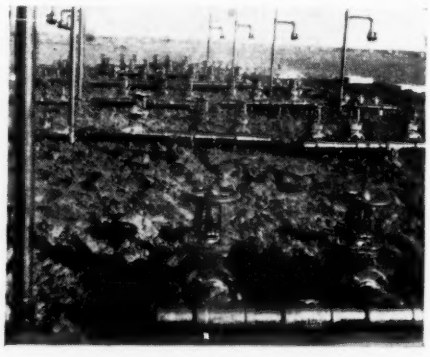
An accompanying photograph shows a battery of tanks equipped with a retaining wall before being partially covered by earth. Another photograph shows the mound of earth covering the Empire storage at Wichita and a third shows the manifolding and vacuum relief equipment for the buried storage.

At Wichita the storage consists of 12 tanks of 20,000 gallons capacity each. The tanks were set on concrete footings, carefully treated to prevent damage by moisture or corrosion and then covered.

From the manhole cover on each tank there extends upward above the surface of the earth a four-inch riser, equipped with a peep sight at the top. The glass has a hair line for accurate reading of a tape running over a pulley just below the glass. As illustrated in the accompanying diagram, the gauging device consists of two floats attached to a calibrated steel tape. The tape runs over ball bearing pulleys, one of which is just below the peep sight in the riser and the other at the bottom of the tank. To keep a slight tension in the tape so that it will hug the pulleys and give an accurate gauge, the two ends are fastened together with a spring. As the liquid level in the tank rises or falls, the two floats attached to the tape move it over the pulleys and allow the gauger to report the liquid level quickly and accurately.



Battery of gasoline storage tanks equipped with gauge glasses at exposed ends ready for partial burying



View across top of buried storage tanks showing manifolds

A. W. Peake is Dixie Oil Vice-President

A. W. PEAKE
Has been elected vice president and is manager of operations of the Dixie Oil Co., a subsidiary of the Standard Oil Co. of Indiana

SHREVEPORT, March 24.—A. W. Peake, of Casper, has been elected vice-president and manager of operations of the Dixie Oil Co., subsidiary of the Standard Oil Co. of Indiana. He has been with the Midwest Refining Co. for several years and leaves the position of superintendent of field operations. Mr. Peake has been a leader in the standardization work of the American Petroleum Institute and among other outstanding achievements to his credit is his work in helping to plan and install the electrification system on Midwest properties in the Salt Creek field.

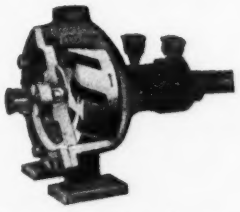
Col. Robert W. Stewart, chairman of the board of the Indiana company, has resigned as chairman of the board of the Dixie and E. J. Bullock has been elected to that position. Fred H. Wickett, for several years president of the Dixie, has followed his recent resignation as chairman of the board of the Pan-American Eastern Oil Corp. with his resignation from the Dixie.

C. W. Washburne Returns to South America

NEW YORK, March 24.—On one of the incoming steamers from South America was Chester W. Washburne, geologist with headquarters here. Mr. Washburne was returning from Venezuela, and shortly thereafter boarded another steamer for Sao Paulo, Brazil.

HASTINGS, Mich.—J. F. Edmonds, who recently sold his interest in the Service Oil Co. is erecting a bulk and service station on E. Green street here. The station will be operated under the name of Edmonds Oil Co. Pure Oil Co.'s products will be distributed.

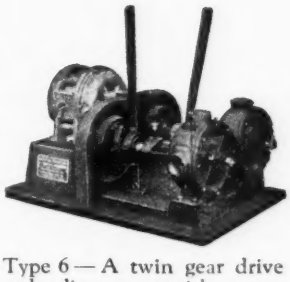
The Advantages of Helical Cut Gears



Cut-away section showing the Helical Cut Gears.

IT is a well-known mechanical fact that a helical gear is highly preferable to a spur gear in any piece of machinery, because the helical gear prevents back lash, runs noiselessly and smoothly, stands up under great strain and has far greater lasting qualities. But in the Perfection Rotary Pump, the adaptation of our special design Helical Internal Gear and Helical Pinion has brought still greater advantages.

It will readily be seen and understood from the illustration of the cut-away section that every time a cam of the internal gear passes by the intake and discharge ports, the column of liquid must be cut. Inasmuch as water and other liquids are very little more flexible than solids, it is evident that a straight spur gear or vane or bucket will produce quite a severe shocking action and strain on the pump, especially when the pump is running at high speed, but the Helical Gear eliminates all shocks and vibration because the action of the helical cam on the liquid column is a shearing action, and the intermeshing cams in the internal gear and the pinion do not go into mesh at once but roll together in a smooth and gradual manner.



Type 6 — A twin gear drive unloading pump with motor.

Write for our new Bulletin No. 271 which illustrates several types of unloading pumps.

Perfection Manufacturing Co.
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National Petroleum News. 1213 W. Third St., Cleveland, Ohio

Belting Records Devised to Provide Uniform Data on Service

By Paul Wagner
N. P. N. STAFF WRITER

STUDIES of proper selection and control of belting in the petroleum industry call for adequate performance records. These will give positive information about the kind of belting showing the longest useful life and the greatest power transmission.

Carried to the ultimate conclusion the data shown by records will enable an operating company to interpret in terms of dollars and cents the profit or loss resulting from its belting selections or manner of usage.

Different operating companies will follow varying policies with regard to the use made of belting service data. Some will be content with the establishment of information that allows standardization, as nearly as possible, on types and make of materials in line with their individual needs.

Others will want to make use of similar data for establishing prescribed forms of usage or, perhaps, they will carry performance figures all the way through into their accounting systems.

It was to provide an adequate service record and to develop data readily comparable from one field, or company, to another that a belting record form was worked out by the American Petroleum Institute Committee having this type of standards in charge.

Use of such records has been recommended by A. H. Riney, Phillips Petroleum Co., Bartlesville, national chairman of the A. P. I. belting committee; Frank O. Prior, Midwest Refining Co., Casper, an untiring worker on belt standardization problems; Paul Endacott, national secretary; Carl A. Young, standardization director of the A. P. I., and others interested in making available to the industry the largest amount of data possible for comparative purposes.

Where the individual needs of an operating company call for data peculiar to its own requirements, such as carrying forward results of the application of its own prescribed forms of belt usage, it is a simple matter to supplement A. P. I. forms with others that will give the desired information. It will be of inestimable value to the work of belting standardization, however, if service tests follow the A. P. I. form, copies of which are reproduced herewith.

As will be seen after reference to this form, provision is made for detailed assembly of data showing the conditions under which belts are used, description of load, kind of dressing applied and all essential details of the composition of material.

Belting standardization contemplates a method whereby each individual belt drive is scheduled so as to determine what type to install for a given mechanical or atmospheric

THE accompanying article is the third on belting standards and the work of the American Petroleum Institute in furthering correct usage of such types of field material.

This article calls attention to the value of systematically keeping belt records and gives instances of results obtained in actual practice.

Earlier articles appearing on page 25 of the Feb. 1 issue and page 46 of the Jan. 11 issue digested the work of the American Petroleum Institute committee on belting, giving details of accomplishments of that standardization group and improvements in operating practice as previously summarized by Frank O. Prior of the Midwest Refining Co., Casper.

SERVICE RECORD

DATE		OPERATION				REPAIRED OR CUT		Hours Off	REMARKS
From	To	See Foot Note*	Size Hole	From Depth	To Depth	Date	Reason		

This is one side of the form of belt record devised by the American Petroleum Institute Standardization Committee. Opposite side of the record form is shown on the next page. Actual size of the form is 8½ x 11 inches

SUMMARY OF SERVICE							MAKEUP OF TOOLS
Days belt was on location							
Actual days of service							
If belt was ruined or wore out prematurely, give causes and details:							
PRODUCTION							
	SWABBING		PUMPING		AGITATION		
	Total	Daily Av.	Total	Daily Av.	Total	Daily Av.	
Bbls. oil							
Bbls. water							

*Drilling, underreaming, fishing, swabbing, cleaning out, pulling rods, tubing.

condition; what belt will afford the longest life, least maintenance cost and best power transmission for every purpose; how replacements should be made in the period of transition from old practice to standardized usage; and the multitude of operating policies that may be inaugurated if service data is to be carried forward to the point of establishing practice governing usage.

It was found two years ago in the investigation made by Pure Oil Co., in the Mexia-Powell region (NATIONAL PETROLEUM NEWS, page 42, April 28, 1926, issue), that a high-priced belt of maximum efficiency on one type of well might prove to be over-powered, or vice versa, on a different type of well. For that reason, the Pure began weighing its wells with dynamometers to determine loads and install the most efficient belts possible to use.

As the problem resolved itself into getting the right belt for the individual well it was apparent that extra heavy belting, by comparison, was required by the heavily loaded well.

A step further than most operating companies have taken was the policy inaugurated by the Humble Oil & Refining Co., which, after a belting investigation (NATIONAL PETROLEUM NEWS, page 49, Aug. 17, 1927, issue) prescribed its own practice forms and now pre-stretches all belts before they are ever put into use in the field, or elsewhere.

The Humble's practice eliminates altogether the old hit or miss policy of nailing belts on the band wheel, cutting them haphazard and then pulling them out of shape under the tension of throwing then over the wheels. Belts are now installed on pulleys under proper tension and ready to run after pre-stretching.

It has been found in Humble practice that many belts in service for months have required no cutting after installation; and it is believed that many, if not all of the belts in use under this improved practice, will continue to operate throughout their longer life cycle without the necessity for cutting at all.

Cost figures are being carried into the Humble's accounting system through the use of dynamometer readings to establish operating values in terms of ton-miles of increased life of belting through pre-stretching practice.

The Humble has supplied each field division with a 15,000 pound capacity Chatillon dynamometer which is used by taking off the beam hanger on a well and attaching the dynamometer to the top of the polish rod; then

A. P. I. BELT RECORD

(TENTATIVE)

This tentative belt record form is recommended for the use of oil companies in recording belt data for their own study and also for the use of the Engineers Sub-Committee of the Special A. P. I. Belting Committee.

Directions:—Every belt when cut to send out is to be suitably and permanently numbered. This record must be kept faithfully by tool pusher, farm boss or pumper in charge where belt is used. It should be provided a safe place in engine house or power house and be kept as clean as possible. It should always accompany the belt and when belt is stored or junked record is to be sent to the main office: New record to be started if belt is rerun.

Company ..... **Field Office** .....

BELT RECORD

Belt No. ..... **Sheet No.** .....

DESCRIPTION OF BELT

Size ..... **Ply** ..... **Length** .....
Kind of Material ..... **Name** ..... **Purchase Order** .....
Surface, Friction .....(X) **Smooth** .....(X) **Stitched** .....(X)
Purchase From ..... **Price Per Foot** .....
Was belt made in accordance with A. P. I. Belting Specifications? .....

DESCRIPTION OF LOAD BEAM-WELL

Well No. ..... **Lease** ..... **Depth of Well** .....
Size Tubing ..... **Sucker Rods, Size** ..... **Make** .....
Size of Engine or Motor ..... **H. P.; Speed** .....; **Size Engine Puller, Face** .....; **Diam.** .....
Size Band Wheel ..... **Size Counter Shaft Pulleys** .....
Is Beam Counterweighted? ..... **How With?** .....
What is Distance from Beam Saddle to Counterweight Suspension? .....
Dynamometer Weighing, Dead Weight ..... **Max.** ..... **Min.** .....
How Often is Well Pulled? Average Number of Days .....
Strokes Per Minute While Pumping .....
Length of Stroke .....
Average Hours Pumping Time Per Day .....

DESCRIPTION OF LOAD BAND WHEEL POWER

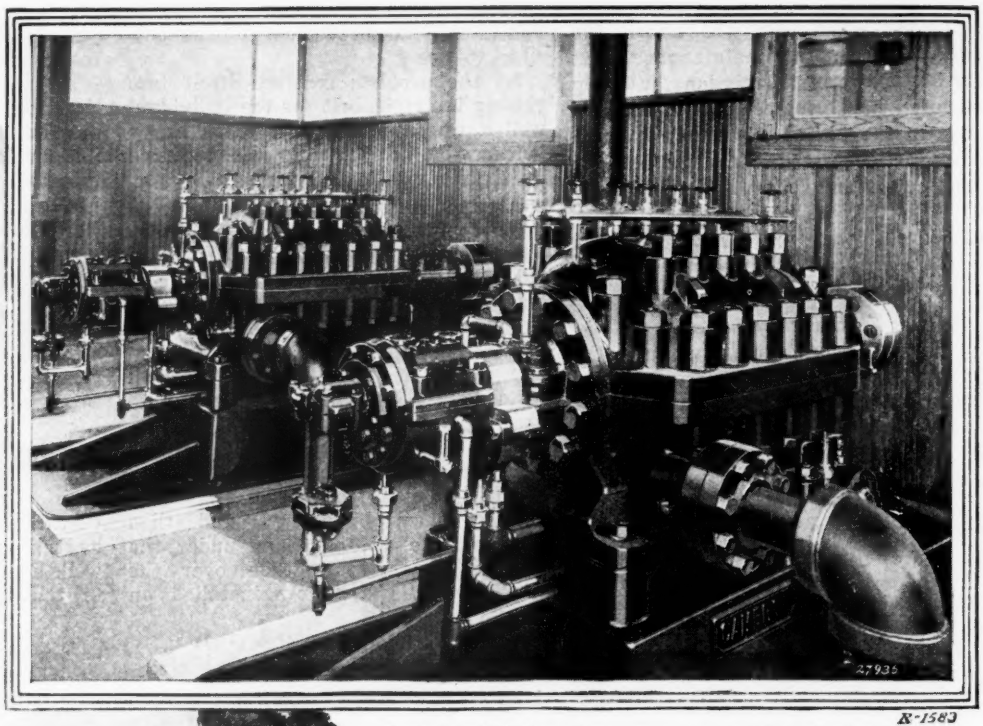
Power No. ..... **Lease** .....
Give Company Numbers of Wells on This Power .....
Size Band Wheel ..... **Make** .....
Size Engine or Motor ..... **H. P.; Speed** .....; **Make** .....; **Cycle** .....
Engine Pulley, Face ..... **Diam.** .....
Counter Shaft Pulleys, Driven ..... **Driver** .....
Hours Per Day Power is Run ..... **Average No. Wells Hooked On** .....
Average Distance to Each Well ..... **Average Depth** .....
Is Power Well Balanced Most of the Time? ..... **Average Pumping Time Per Well** .....
What Kind of Belt Dressing is Used? ..... **How Often?** .....
Make and Type of Fastener Used .....
What is Your Opinion of Belt? .....

.....

.....

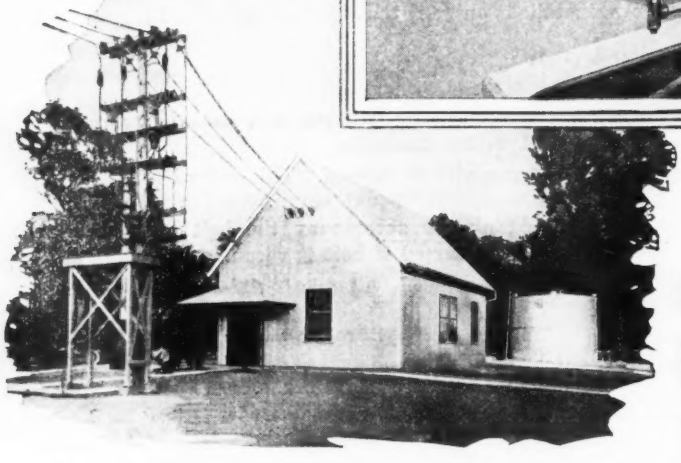
DATE: **By** .....
Transferred ..... **Position** .....
Junked ..... **Date** .....

FILL IN SERVICE RECORD ON OPPOSITE SIDE.



K-1583

Typical installation of two Cameron electric-motor-driven centrifugal pumps in pumping station of the Illinois Pipe Line Company. Each one of these pumps is capable of carrying the full load of 22,000 barrels per day against a total head of 600 lbs. pressure.



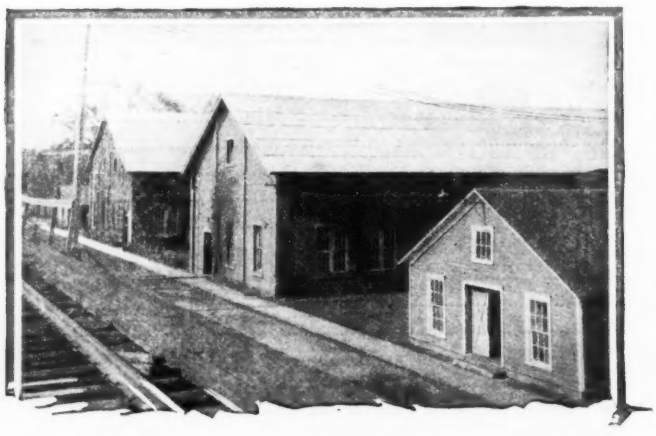
Typical intermediate pumping station erected by the Illinois Pipe Line Company for housing two Cameron electric-motor-driven centrifugal pumps, and a 1,000-barrel emergency storage tank.

Centrifugal Pumps in Pipe Line Service—

BY INSTALLING Cameron electric-motor-driven centrifugal pumps supplementary to the direct-acting steam pump stations, the Illinois Pipe Line Company has raised the capacity of a single 8-inch line from 15,000 to 22,000 barrels a day.

Small pumping stations, erected at intervals of 25 miles between established stations, send the oil flowing through the pipe line in a steady stream, free from surges, and this tends to lessen the occurrence of blown gaskets and leaks.

Cameron centrifugal pipe line pumps cost less to install and to maintain, and show marked operating economies over most other types of pumping plant used for the same service.



One of the old steam pumping plants of the Illinois Pipe Line Company.

INGERSOLL-RAND COMPANY, 11 Broadway, New York City
A. S. CAMERON STEAM PUMP WORKS
Offices in principal cities the world over
For Canada Refer—Canadian Ingersoll-Rand Co., Limited, 10 Phillips Square, Montreal, Quebec

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Ingersoll-Rand

A. S. Cameron Steam Pump Works

attaching a beam hanger, or wire line sling, to the other end of the dynamometer before pumping the well.

The maximum and minimum weights are noted. Then the well is counterbalanced in the amount of the average of the maximum and minimum weights. Calculations give the average load on the belt. The speed of the belt being known it is then possible to compute the ton-miles of service per unit of time, such as per day, week, month or quarterly period. When a belt has been worn out its life value is computed by dividing its cost by the number of ton-miles of service realized.

World's Deepest Producer In Ventura Avenue

LOS ANGELES, March 23.—Associated Oil Co. last week placed the deepest oil producer in the world on production.

Its Lloyd 102 was completed in the Ventura Avenue field at 7210 feet for about 3200 barrels of net oil.

Late in 1925, Miley Oil Co. completed a well at 7591 feet at Rosecrans, Cal., for about 200 barrels of oil on the compressor. Some weeks ago this well was taken off production as not paying.

The deepest hole in the world, later abandoned as dry, was drilled, in 1926, to 8201 feet by the Chanslor-Canfield-Midway Oil Co. in the Olinda field in Orange County.

Associated's Lloyd 102 was spudded Sept. 21, 1927, and placed on production March 13, 1928, making better than 3400 barrels of fluid, 3220 barrels of which was clean 27.8 gravity oil, in addition to 4,000,000 cubic feet of gas.

The bean was at first 1 5/64-inch and later decreased at 1 3/64-inch. The tubing pressure was 400 pounds with 550 pounds on the casing. Twenty-inch, 81-pound pipe was landed Sept. 30, 1927, at 648 feet. String of 13 3/8-inch, 61-pound casing was landed and cemented Nov. 11 at 3800 feet. On Jan. 13, this year, 5090 feet of 9-inch, 45-pound casing was landed and cemented.

Bottom of hole was reached March 3. A string of 6 5/8-inch with 2047 feet of 200 mesh slotted pipe on bottom was run into the hole but froze at 6289 feet, 921 feet off bottom. Three-inch tubing was hung at 4950 feet.

Drilling of this record well was under A. E. Warren, drilling superintendent for California, while the drilling work was under the supervision of Louis De Ford, rotary foreman. Drillers on the well included R. Casner, A. M. Gaas and E. T. Bell. The field superintendent at Ventura Avenue is M. Mears.

A 122-foot reinforced steel derrick was used.

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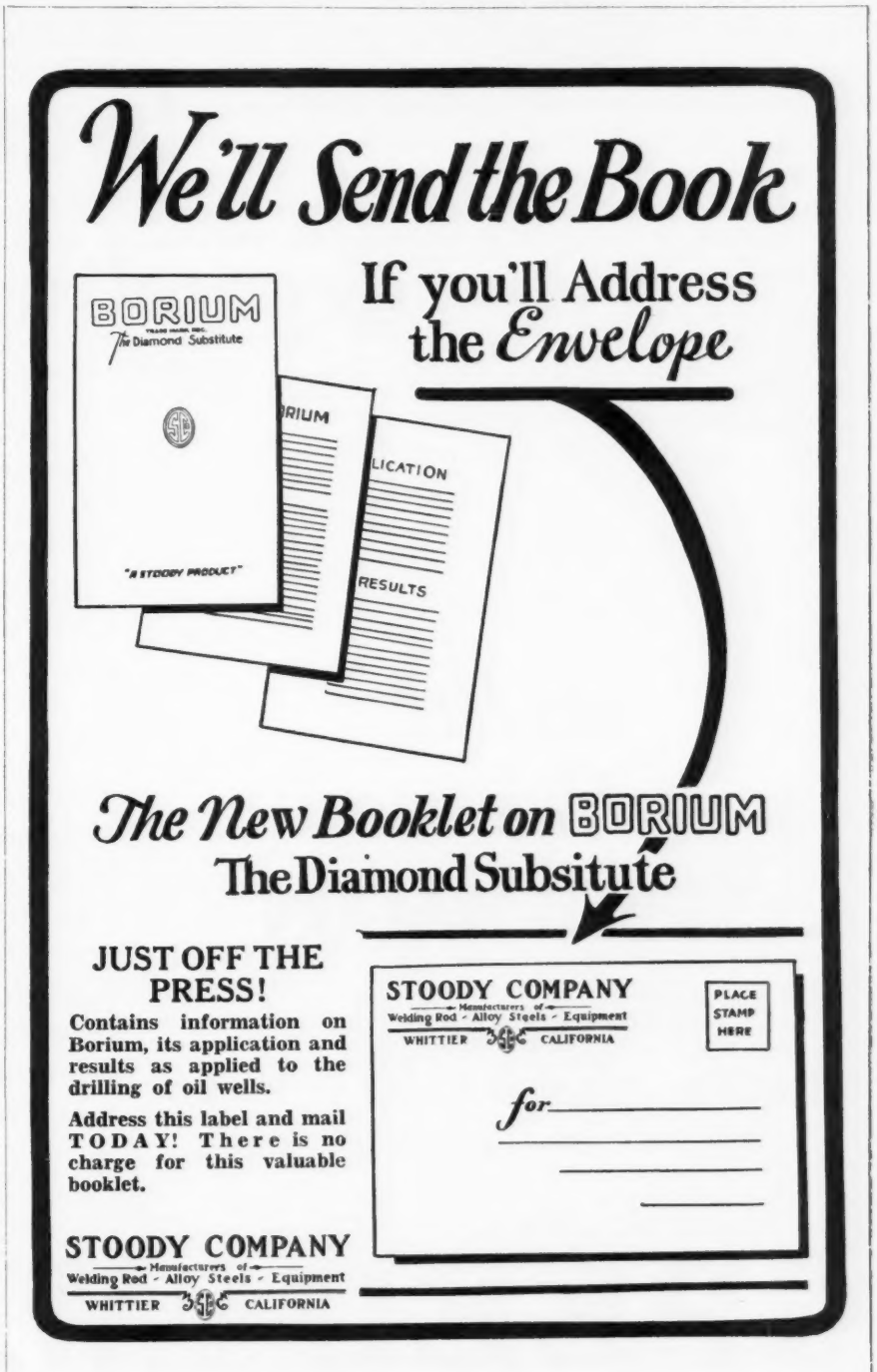
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that your speed may be safer 4

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Reo presents in the new Speed Wagons the most complete line of commercial vehicles equipped with 4-wheel brakes of uniform type.

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Always in adjustment, no cables to stretch, no rods to bend. Equal to every job, no matter how heavy the load.

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Not external contracting. The new Speed Wagon brakes are protected against dirt and moisture. They stop you in any weather on any road, in reverse or going forward.

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The Gasoline Tank Car Market Explained

MOST oil men little realize that the tank car market is the key market to the industry. It can unevenly and unfairly distribute the price obtained from the consumer, it can break the market price of crude oil, and it can destroy the price to the consumer.

Most of the troubles of the oil industry have been due to a poor tank car market at the refinery and this has been unnecessary.

If the tank car markets had always been reasonably profitable, most refining companies would not have gone into the bulk station business.

The tank car market is the least understood of any oil market. Yet it should be the best understood market.

In an effort to spur on the study of this market, the publishers have submitted the following discussion in booklet form. Copies of this booklet entitled "The Tank Car Market" have been distributed free to jobbers and refiners. Any who were overlooked, we will appreciate their writing us.

Extra copies are also available to whoever can use them. We want the widest possible distribution of the booklet.

Like everything else in this world, the oil industry and its practices and customs, have grown. One necessity has brought on one custom, another necessity another, and these have developed still other customs.

While new practices have developed and some have been discarded, **new people have come into the industry, people who did not know what had gone on before; who did not know that certain things have been tried and discarded; who did not know why some things have come into existence.**

Many of these men came from other lines of business where certain expressions meant certain things. These men have attempted to understand those expressions in the oil business in the light of their knowledge which gave them a wrong impression of what the same words in the oil industry might mean.

To an extent, despite all the wide distribution of information, there has been a certain lack of homogeneity in the industry. One section of the country has not always appreciated what another section was doing.

However, the day has long since come in oil, as it has come in all other lines of industry in this country, when we must study our industry as a whole and we must also study it in relation to all other business in this country and abroad as well.

The quickness and cheapness with which accurate information is disseminated these days, the low cost and speed of transportation of all products, the increasing ingenuity of men in developing new and cheaper processes and better and more efficient products makes it necessary that we today know far more of the factors that concern others in our industry and in other industries than ever before.

Our competitor is not just across the street from us any longer.

Potentially he may be a thousand or two thousand miles away, and though we may never come in contact with his salesmen and his goods, he still may be, in fact, a competitor. **For Illustration—**

All of us probably for years thought of California as away off by itself and having no relation of consequence to the rest of the oil industry. Yet see the influence of California on the markets for oil in the past few years. Independent marketers back inland around Buffalo and Pittsburgh are marketing California gasoline through their stations —gasoline that was transported by tanker through the Panama canal to Atlantic coast terminals and then reshipped in tank cars. California gasoline is actually being sold right alongside of Pennsylvania refineries running on the original crude oil of this country. Only last year it moved as far west as the Ohio-Indiana state line.

The present practice of refiners, brokers and marketers all over the Central West in selling and buying gasoline on a Group 3, Oklahoma, **price basis** when only a very small part of it comes from refineries that are actually located in Group 3, is a further illustration of the wide spread characteristics of the oil business.

The Tank Car Market—What It Is and How Its Price Developed

What is the tank car market?

It is the sale of petroleum products in tank cars. This sale is not even limited to jobbers and brokers but also is with consumers. There are many individual tank car markets at different refining and bulk storage terminal groups.

The tank car market has been always with us, back to the beginning of the tank car itself. There have been times when it was profitable to refiners and times when it was not. Low prices, as at present, are not unusual. Prices would get low forty years ago.

But back in the old days products differed, even from day to day in the same refinery hence prices differed. There was no standardization of products or methods or instruments for testing those products. In fact nearly all of the standardization has come in the last ten to fifteen years.

It was the coming of the big automobile demand for gasoline at the same time that we discovered vast new fields of crude oil in the west, that made the tank car market a prominent factor in the industry and that standardized products.

But even on the development of the vast Mid-Continent field, the arrival of the big Cushing field at its peak in 1914 and many of the pools that have come in since, the tank car market as a separate proposition did not reach its present important state, because the price in tank cars f.o.b. the refinery was of little consequence. **The refiners sold nearly all of their gasoline and kerosene to the marketer—then most commonly known as the jobber—at so much off the tank wagon price in the buyer's town or territory.** This was not only the basis for all contracts but it was primarily the basis for sales outside of contracts.

In the early days of the Mid-Continent field the discussion between refiner and marketer was not as to whether the price should be 5 cents or 10 cents a gallon f.o.b. the refinery, but how much margin or differential would be allowed the marketer under his tank wagon price—the price of the Standard Oil company in his territory. Whether it would be more or less than 3 cents off that tank wagon price was the subject of the big battle before the World war. As the war came on and all costs went up the argument was whether it would be 3 or 3½ cents on gasoline, then 3½ or 4 cents and on up. This was the basis on which all companies sold goods, including the Standards.

This argument got so heated that all parties to it overlooked what was actually happening. That was that a separate and distinct tank car business of selling gasoline at so

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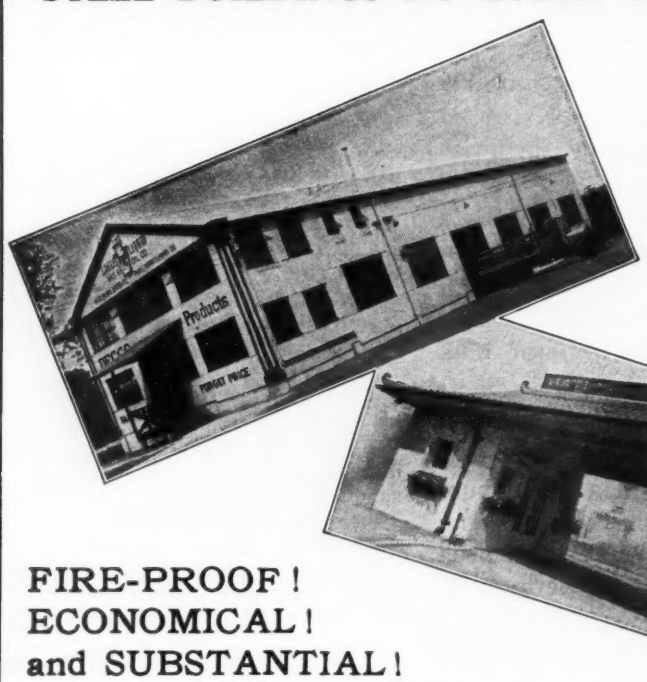

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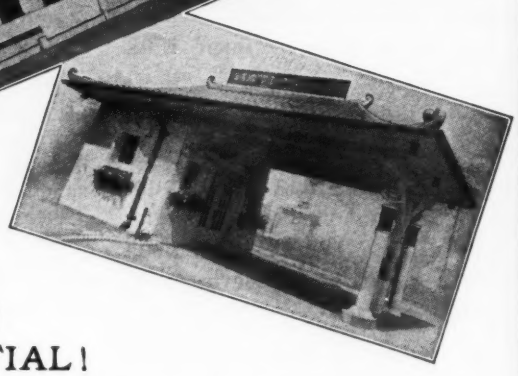

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"Built to a Reputation"

Pioneers in Standardized Steel Storage

STANDARD Tanks have set an enviable standard for steel storage the country over. The in-built quality is the result of over a score of years of careful workmanship.

We build in all capacities for all purposes from 65 gallons to 55,000 barrels.

THE STANDARD BOILER & PLATE IRON CO.
Niles—Ohio

many cents per gallon f.o.b. the refinery to all comers, had been developing and had reached large proportions.

What particularly was overlooked was the fact that this price was becoming less than the price to the jobbers buying at so much off the tank wagon price.

While the battle was on between refiners and their old customers, the jobbers, as to the marginal contract terms, newcomer after newcomer to the oil business put up bulk storage, bought tank trucks and then bought gasoline the cheapest way he could which was in the open tank car market.

The newcomer could buy it so cheap that he could turn around and, when necessary to get the business, cut the price of the Standard Oil Company and his jobber competitors who were operating on a margin-off-the-tank-wagon price.

The jobbers with the marginal contract would meet the price and then hope or even try to get the Standard to come down so as to give them the same margin from the cut price, thus passing the price cut back to the refiner. In the course of time the Standard would have to come down. So the refiner not only found his open tank car market price a poor one but often the net back on his marginal contracts equally poor.

All this time the Mid-Continent field was developing rapidly. Crude oil was being produced in great quantities regardless of the market requirements, refinery capacity was being built without thought of where the products would go or the price they would bring.

Finally, into this turmoil came California gasoline on the Atlantic coast.

It took the oil industry in the West about a year of grappling with real trouble before both jobber and refiner realized that the marginal contract was unsound. By that time this form of contract had killed itself after almost killing the refiners and many faithful jobbers.

(To be continued)

NEW YORK, March 24.—M. W. Mattison, taxation and accounting expert of the American Petroleum Institute, is planning to leave shortly for California to hold the first of a series of regional meetings of the institute's sub-committees on a uniform method of accounting. Mr. Mattison recent returned to New York from a vacation. Meetings of the A. P. I. sub-committees were not held the first quarter year because their members were busy getting out annual and income tax reports for their companies.

WASHINGTON C. H., O.—J. E. Smith Oil Co. of Washington C. H. is building a metal service station at Hillsboro, O. The station was designed by the Emery Mfg. Co. of Cincinnati.

THERE'S GRIP
in those husky blocks!

A powerful new tread—thick, strong, tough—gives your trucks new traction when they ride on the Goodrich De Luxe Safety Cushion. For heavy tonnage and heavy going—give this newest Goodrich Solid the job of "gripping through" at a lower cost per mile.

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Solids and Heavy Duty Silvertowns, High Pressure or Balloon

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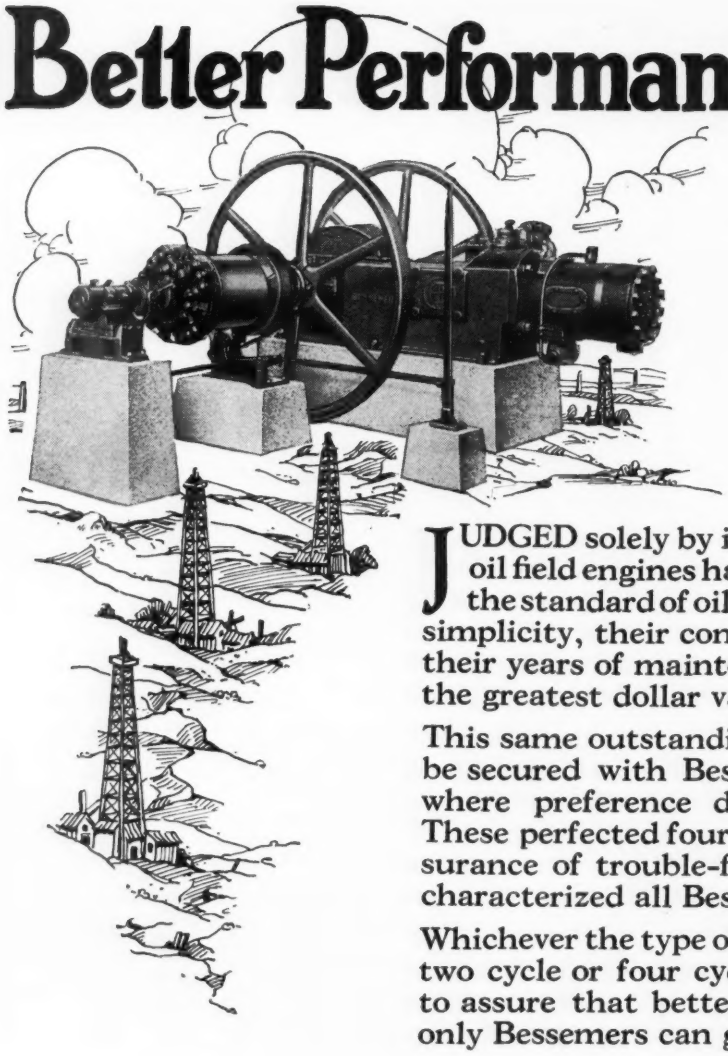

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JUDGED solely by its performance, Bessemer two cycle oil field engines have become universally recognized as the standard of oil country power plants. Their rugged simplicity, their consistent 99% + running records, and their years of maintenance free operation mark them the greatest dollar values in oil field engines.

This same outstanding Bessemer performance can also be secured with Bessemer four cycle oil field engines, where preference dictates a four cycle power plant. These perfected four cycle Bessemers have the same assurance of trouble-free serviceability that has always characterized all Bessemer oil field power equipment.

Whichever the type of oil field engine you prefer, whether two cycle or four cycle, you can get it Bessemer built to assure that better performance and longer life that only Bessemers can give you.

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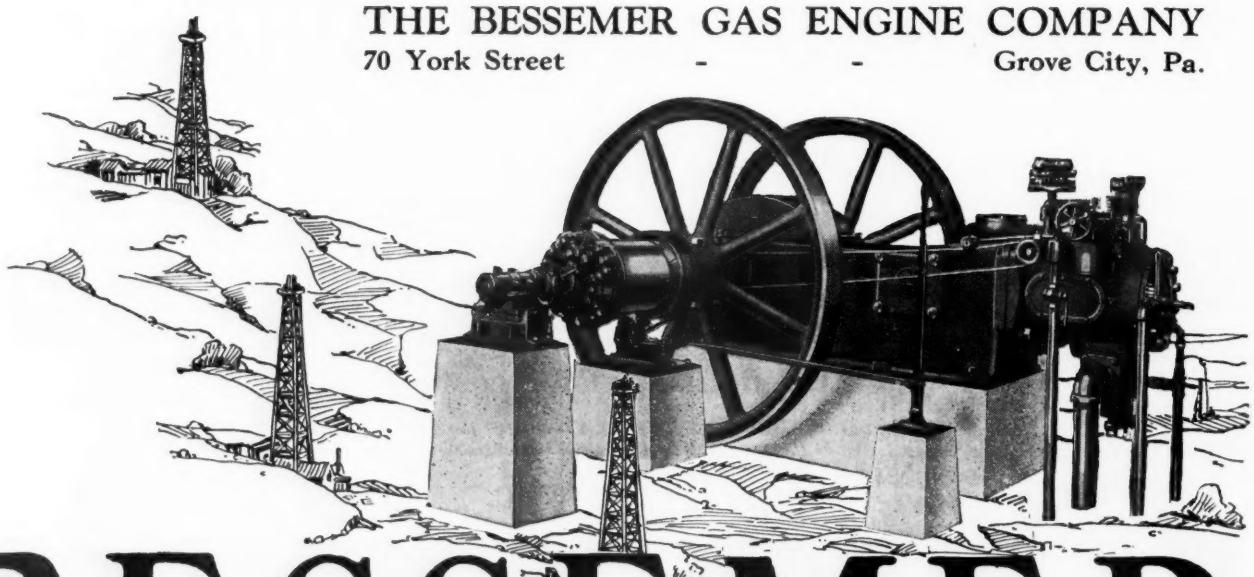


BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

New Slush Pump, with Compound Steam End, Proves Fuel and Water Saver

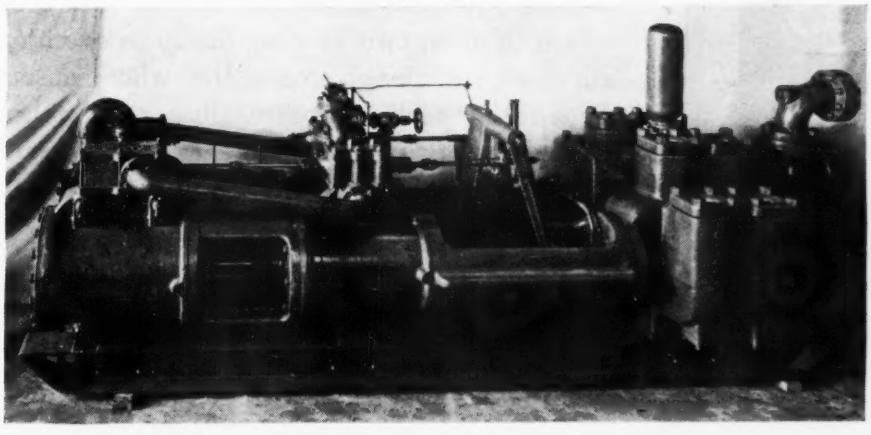
By John Power
N. P. N. STAFF WRITER

TULSA, March 24

ONE of the newest additions to rotary drilling equipment, and one which seems to have been well received by driller, contractor and producer, is a new compound type of slush pump, or "mud hog".

While the principle of compound steam pumps is by no means new to industry as a whole, its application to oil field equipment is new.

It was felt by engineers that for every horsepower used in oil field work, one was thrown away, but that by the application of methods ordinarily employed in factory or mill powerplants to drilling and producing steam plants this waste would be recoverable.



New type slush pump showing compound steam end

The scarcity, as well as the high cost, of fuel and water in the Seminole district naturally directed the attention of engineers in charge of the operations of producers in that territory toward possible savings in this direction.

To this end a compound slush pump was suggested by Hollis P. Porter, chief production engineer of the Gypsy Oil Co. The pump was designed and manufactured under the direct supervision of H. D. Cornell, president of the Worthington Machinery Corp. of Okla.

B. Y. Yerkey, of Steinberger and Yerkey, drilling contractors, made several valuable suggestions for the fluid end of the pump.

These were carried out by J. A. Lupfer, technical assistant to the vice-president of the Worthington Co. The pump is known by its makers as the Gypsy type slush pump.

According to E. I. Wilcox, driller for Steinberger and Yerkey, the pump maintains easily a pressure of better than 400 pounds. In one instance, when circulation had been lost as a result of the hole caving at 2300 feet when the tool were on bottom below 3000 feet, the pump maintained an average pressure of 900 pounds for nine days, a re-establishing circulation and saving the hole.

These unusually high pressures are made possible by the compound steam end. In case the steam pressure should be unusually low or the bit should start to plug, the steam may be injected directly into the low pressure cylinders by means of a by-pass valve.

It is possible to drain all four cylinders by opening two globe valves, which are easily accessible from the derrick floor.

By using outside valve adjustment, the valves on both the high and low pressure steam chests can be adjusted with the pump in operation. The cross stand contains three oil reservoirs for lubricating the cross shafts and steam piston rods.

Force feed lubrication is provided for both the steam valves and both high and low pressure cylinders. An Alemite system lubricates the cross head links. The fluid piston rods are washed by an enclosed type gland, with the clear water reservoir placed far enough away from the stuffing box to give easy access to the stuffing nuts.

The piston cradles are ribbed, and the link type cross head is used to combat lost motion and bending stress. Cylinder linings are hard cast, the same as in the Diesels. The exhaust line is carried to the ground to simplify field installation and to eliminate fittings.

The fluid end of the pump is made to withstand 1500 pounds pressure. The suction air chamber is an integral part of the fluid end, and with wide centers and no flat surfaces in the fluid lines it is possible to keep a constant flow through the fluid flow lines.

The fluid valves are loose guided top and bottom, the same as on hot oil pumps, the guide bushings being tool steel. The valve seats are hardened tool steel, with balata inserts, having ⅞ inch seats and a 1 inch lift. The valves are 2-piece, with the top guides and top cover plates integral, with no joint on the pressure side.

The field has been the laboratory in the development of the new "mud hog". Close watch was kept on the amount of fluid delivered, and the amount of fuel used by it.

The pump was designed originally to operate at a speed of 30 strokes per minute, which is a piston speed of 90 feet per minute. This gives a delivery per minute of 350 gallons However, the pump has operated successfully at twice that speed, delivering 700 gallons with a piston speed of 180 feet per minute.

According to records kept by Gypsy engineers and by the contractors a saving in fuel of 33 per cent resulted from this application of the compound principle of steam pumps to a slush pump. The actual savings on water were 33.8 per cent and on gas 30 per cent. With fuel and water costs in Seminole averaging more than $1 a foot the amount of such a saving is considerable.

Accuracy without sacrificing speed

Speed

without sacrificing accuracy

The owner of every car that drives in for the first time will be favorably impressed with your station's service if he draws up beside a ***Pittsburgh Progress Pump.*** He'll feel friendly and come back. Old customers can be held steadfast by the better service this pump enables you to give them.

Your location may be perfect, your station convenient, attractive, your equipment and products good —but *if the pump is slow, faulty in operation,* or *inaccurate* in its measurement the whole ensemble fades. When the neck of your filling station bottle is the ***Pittsburgh*** Pump you have gone far toward the goal of perfect service to *your* public.

Pittsburgh Meter Pumps are made in three models —A (Hand operated)—H.E. (Combination Hand and Electric) and A.P. (Air Pressure). All models are identical in appearance,—graceful and massive. Operation is continuous, fast, accurate. The meters are double faced with 8″ illuminated dials, with fractional gallon indicator. Nozzle control on electric and air models. On the "A" and "H.E." models an automatic control valve eliminates air before entering the meter. Therefore, *only liquid actually delivered is measured.* Filter Clean-out, Visible Gauge and other important features.

Pittsburgh Gasoline Pump Co.
6600 Hamilton Ave. Pittsburgh, Pa.

There are two pumps on the market whose accuracy is not impaired by leaking foot valves. These are Model A and Model H.E. in—

The Pittsburgh Pump

Here are Good Marketing Practices Trade Commission Approves

WASHINGTON, March 24

TWELVE of 14 rules submitted by the petroleum industry of Virginia to the Federal Trade Commission for incorporation in a code of ethics for petroleum marketers, were approved by the commission.

Two rules were disapproved, as was a clause which reserved to each marketer the right to violate the provisions of the code if other marketers did not live up to the approved practices.

One of the two rules disapproved by the commission as being, in its view, not good marketing practice if put into effect, provided that deliveries of gasoline should not be made from tank wagons or trucks direct into fuel tanks of other motor vehicles.

The other rule disapproved would have set up a uniform extension of credit by marketing companies to dealers, by providing that one oil company could not make a greater extension of credit to a competitor's dealer in an effort to get that dealer's business.

The rules, which were submitted by a committee of Virginia marketers after a trade practice conference in Richmond last May were rearranged by the commission and divided into three groups.

The first group, which was approved, is described by the commission in a statement to the marketers as "practices which are obviously unlawful".

The second group was "accepted by the commission as expressions of the trade".

The third group contains the two rules which were disapproved.

The text of the three groups follows:

GROUP I

APPROVED PRACTICES

Rule 1. Loaning or Furnishing Equipment. Gasoline pumps and tanks and motor oil outfits may be loaned or leased for the exclusive storage and handling of the products of the lender, but the borrower shall not be prohibited from handling in other equipment the products of another supplier. The borrower or lessee shall be required to pay at the time of the installation of loaned equipment the actual cost of installing said equipment; and shall pay as, or when due all privileged taxes attaching because of the installation or maintenance of such equipment.

A lender of such equipment shall neither extend credit to a borrower for installation costs, nor advance money to a borrower to cover payment of privileged taxes, or any other expense, in any manner related to the installation or maintenance of loaned equipment.

Wholesalers shall not construct for retailers any driveways, canopies, sheds, greasing pits, buildings or other structure, do painting other than signs, make improvements to existing structures or facilities, nor furnish or loan air compressors, greasing lifts or racks, or other things of value except gasoline pumps and tanks and motor oil outfits, nor loan money for the same.

Rule 2. Wholesale Prices. All refiners, distributors, jobbers and wholesalers making tank wagon deliveries shall conspicuously post at each place from which such deliveries are made the price for gasoline and kerosene delivered by tank wagon. All gasoline and kerosene sold shall be sold at the posted price, except as provided in Clause 11 hereof. The wholesaler shall not allow or grant any rebate, concession or discount from the posted prices to any customer, or class of customers, on any ground.

Rule 3. Consignments, Commissions and Compensation to Dealers. Refiners, distributors, jobbers and/or wholesalers shall neither consign gasoline, kerosene and/or motor oils to retail dealers for resale by said dealers, nor pay to retail dealers other than legitimate employees, any commission or compensation for the sale of their products.

Rule 4. Leases and Licenses. When refiners, distributors, jobbers and wholesalers acquire leases of service or filling stations, or service or filling station sites, such stations or sites shall not be subleased, or the operation thereof licensed for a rental or charge less than that paid by such refiners, distributors, jobbers or wholesalers and ten per cent per annum of the value of any improvements other than pumps, tanks, and motor oil outfits placed thereon by such refiners, distributors, jobbers or wholesalers, provided, however, that when the value of the site for service station or filling station purposes has decreased below that existing when the lease was taken the rental or charge therefor to the sublessee or licensee may be reduced proportionately to the decrease in the value of the site for service or filling station purposes.

Rule 5. Interference with Existing Contracts. No refiner, distributor, jobber or wholesaler shall knowingly induce, attempt to induce, or assist a party to break an existing, lawful contract for the sale of petroleum products between that party and another when said contract is for a certain time and contains no provision for termination prior to the end of the contract term by either contracting party, and each refiner, distributor, jobber or wholesaler shall promptly discontinue all efforts which might induce a contracting party to break a contract upon receipt of notice of the existence of the contract.

GROUP II

EXPRESSIONS OF THE TRADE

Rule 6. Retail Prices. Operators of service stations, filling stations, curb pumps and bulk plants serving consumers shall conspicuously post the prices at which gasoline and motor oils are sold therefrom. Gasoline and motor oils shall be sold to all consumers at the posted price. There shall be no discrimination in prices between consumers.

Rule 7. Coupon Books. Coupon books, if used, shall be sold and redeemed at their face value, without any discount.

Rule 8. Gifts or Bonuses. No oil or other thing of value shall be given away on opening days, special sale days, or other occasions.

Rule 9. Lotteries. Lotteries, prizes, wheels of fortune and/or other games of chance shall not be used in connection with the sales of gasoline or motor oils, or at places where gasoline and motor oils are sold.

Rule 10. Equipment and Advertising Rentals. Refiners, distributors, jobbers and/or wholesalers shall not pay any rentals for the privilege of installing pumps and tanks, or for displaying advertising on premises where gasoline is sold.

Rule 11.—Purchase or Rental of Equipment. Refiners, distributors, jobbers and wholesalers shall not rent from any dealer or consumer any delivery equipment and shall not purchase from any dealer or consumer any delivery equipment for more than its actual value.

Rule 12. Bulk at Plant Deliveries. The practice of making deliveries of gasoline at wholesale plants into tank wagons or trucks operated by or for the purchasers thereof is discouraged. When such deliveries are made the price of the product shall be the posted tank wagon price less cost of handling by purchaser, provided, however, that the allowance to be de-

Pennsylvania Oil PLUS

Plus what?—Plus the fact that it is blended from 450 Bright Stock (Sharples Process) refined in ONE Freedom Plant—and from 100% Pennsylvania Crude Neutrals refined in ANOTHER Freedom Plant. Thus, under one supervision, with the one guarantee of a 48 year old refinery, a line of Freedom 100% Pennsylvania Motor Oils is blended to specifications which appeal to discriminating jobbers — a complete line of oils that enable you to build your business and your customers' businesses on repeat order foundations.

For nearly 50 years, The Freedom Oil Works Company has specialized in the refining and blending of 100% Pennsylvania Oils. In one way, that explains why jobbers the country over come to this concern for their requirements.

Deliveries can be made immediately, in tank cars, compartment tank cars, barrels, or drums.

Write for quotations.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 31

Also available for immediate shipment

450 Bright Stock (Sharples Process) which requires less Neutral to blend to the ordinarily required specifications.

100% Pennsylvania Motor Oils, *blended to your own Specifications*, from Freedom 450 Bright Stock and Freedom 100% Pennsylvania Crude Neutrals.

Freedom Quality Stocks
600 Steam Refined
635 Steam Refined
650 Steam Refined

Freedom 300 Mineral Seal Oil made to Railroad Specifications.

Freedom Filtered Burning Oils.

The Freedom Oil Works Company
Freedom, Penna.
Established 1879
Refineries at Freedom and Coraopolis, Pennsylvania

FREEDOM

ducted from the posted tank wagon price for handling by purchaser shall not exceed one (1c) cent per gallon.

GROUP III
DISAPPROVED PRACTICES

Rule 13. Tank Wagon Deliveries to Motor Vehicles. Deliveries of gasoline shall not be made from tank wagons or trucks into the fuel tanks of automobiles or other motor vehicles.

Rule 14. Credit Extension. No refiner, distributor, jobber or wholesaler shall give to a dealer doing business with a competitor a greater extension of credit than that allowed by the competitor for the purpose of inducing the dealer to cease doing business with the competitor.

Pasotex Pipeline Work Will be Rushed

HOUSTON, March 24.—A. F. Shulte, in charge of right-of-way work for the Pasotex Pipeline Co., subsidiary of the Standard Oil Co. of California, has announced the general route of a pipeline that will connect west Texas producing territory with the Pasotex Petroleum Co's. refinery under construction at El Paso.

The Pasotex pipeline will run south of the Hueco mountains, north of Teepee butte, thence slightly northeast in an almost straight line to Cactus flats, south of Guadalupe peak across the Van Horn-Carlsbad highway, thence through the Delaware mountains and east to a point about two miles northwest of Wink, in Winkler county. Feeder lines will connect with the Yates field, Pecos county, and other areas where Standard of California subsidiaries may be in need of production outlet.

Work will be carried forward from both ends of the system with the idea of completing the 8-inch line in July. As previously announced in these columns the first 5000-barrel unit of the El Paso refinery is already under construction.

LOS ANGELES, March 22.—S. A. Sisson, auditor of the Midway Oil Co. for the past 18 years, has recently been elected secretary of the company to succeed M. M. Miles, resigned. After a short vacation, Mr. Miles plans to open his own mining and oil land leasing business, in Los Angeles.

LOS ANGELES, March 22.—During Joseph, formerly manager of the purchasing department of National Supply Co., in Los Angeles, and who has served National for 21 years, recently joined the Associated Supply Co. as purchasing agent. Mr. Joseph has his offices at 741-745 Pacific Electric bldg., Los Angeles.

Nunn to Manage Marland Tank Car Sales

WESLEY I. NUNN

Will become manager of the Tank Car Sales Department of the Marland Refining Co. on April 1. He formerly was in charge of the retail marketing department for Marland

TULSA, March 23.—Wesley I. Nunn, head of the retail marketing department of the Marland Refining Co., will be made manager of tank car sales for the company on April 1, succeeding Fred D. Applegate. George Woods who has been assistant to Mr. Nunn will become head of the retail marketing department. Mr. Nunn entered the Marland organization several years ago in the advertising department. He was head of the advertising department when he was moved to the retail sales division and made its manager.

Grace Emery to Erect Bradford Hotel

BRADFORD, Pa., March 24.—Plans for a new hotel here, to be erected by Miss Grace E. Emery, have just been announced. It will be built on the site of the old St. James Hotel and will be known as "The Emery".

Razing of the present building was to start March 20. The new hotel will be six stories, with 100 sleeping rooms, a few small apartments, sample rooms, lobby, dining room and coffee shop. A private dining room on the first floor will be available for business organizations and clubs.

Both dining rooms will be convertible into ball rooms.

Miss Emery is the daughter of Hon. Lewis Emery, Jr., who founded the Emery Mfg. Co., oil producer and refiner. She has just returned from a several months' vacation at Montego Bay, Jamaica.

Fig. 370

Screwed Jenkins Standard Bronze Gate Valve

Fig. 325

Screwed, Jenkins Standard Iron Body Gate Valve

Specify "oil-tested" valves

When you buy Jenkins Gate Valves for petroleum usage, mention the words "oil-tested". You can then be sure that the valves you receive have been given a real oil test at the Jenkins factory.

These valves for oil lines afford a wide choice for engineers in the producing, refining and distributing branches of the industry. It provides them with valves not only tested but *packed* for oil service.

Jenkins Valves are obtainable through supply houses everywhere.

JENKINS BROS.

80 *White Street* ..... *New York, N. Y.*
524 *Atlantic Avenue* ..... *Boston, Mass.*
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JENKINS BROS., Limited

Montreal, Canada *London, England*

Always marked with the "Diamond"

Jenkins Valves

SINCE 1864

REFINING

Reliable information on every phase of modern American refinery practice is to be found in the book prepared by H. S. Bell, and called AMERICAN PETROLEUM REFINING.

Some of the chapter headings are: Refinery Site and General Arrangement; Stills; Cracking; Cold Settling; Compounding; Storage of Oil; Bulk Transportation; and Fire Protection.

The cost of AMERICAN PETROLEUM REFINING is only $5. Just mail your check today to—

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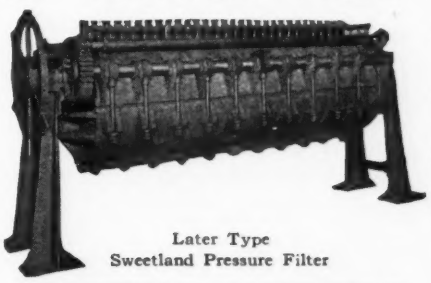
A Clean-Cut Separation



Later Type
Sweetland Pressure Filter

What to do with that spent doctor solution!

Don't throw it away. Both the solids and liquid have value.

Sweetland Filters are being used in several refineries to separate them. It's a profitable step.

For further information address our nearest office.

Sweetland Filters were always good. Later models are even better.

UNITED FILTERS CORPORATION

Hazleton, Pa.—Los Angeles Office, Central Building

Other Offices in Chicago—New York—Salt Lake City
Export Office—25 Broadway, N. Y.—Code Address, Unifilter, New York

Products that Satisfy

Satisfied Customers are the life of your business— ***and there is nothing that satisfies like real quality, at the right price.***

Humble Products "repeat" because their quality is right. Each one of them—and there is one for each lubrication need—has been carefully designed and prepared, and thoroughly tested to see that it meets the most rigid requirements.

Our line is complete, and our refinery facilities are such that we can take care of your needs at all times — making prompt shipments, in any quantity you may desire—a carload or a shipload—by rail or water, to any point on the globe.

Wire or write for samples and prices.

HUMBLE OILS — HUMBLE OIL & REFINING CO. — HOUSTON, TEXAS

Reg. U. S. Pat. Off.

Humble Oil & Refining Co.

Houston, Texas
"Zero Cold Test Oils"
Producers—Pipe Lines
Refiners — Marketers

Prairie Oil & Gas Enlarges Home

INDEPENDENCE, Kan., Mar. 22.—The Prairie Oil & Gas Co. recently completed a five-story addition to its office building here. The building now occupies nearly three quarters of a city block.

General offices of the Producers and Refiners Corp. were moved to Independence March 5. This company largely owned by the Prairie, occupies one floor of the new building. The Prairie Pipe Line Co. likewise has its headquarters in the building.

New Cast Pipe Can be Easily Cut and Threaded

By Gray I. Morriss*

RECENT developments in foundry practice have made it possible to produce cast pipe that can be cut and threaded at any place within its own length, maintaining the same inside and outside diameter as extra heavy steel or wrought pipe, making it possible to secure installations of the new cast pipe made up with standard threaded fittings. The tests on this pipe are such that the conclusions reached are in accord with the statements made by technical men at the refineries, that the physical structure of the cast iron is more important than the analysis in meeting and resisting corrosion.

The mixture of this iron is relatively high in silicon, low in phosphorus and sulfur and has a nickel-chromium content.

By the use of special molds and cores, the castings are of a semi-pearlitic structure and are free from heat strains or chills.

The standard test bar (1 by 1 by 13 inches) has shown a breaking pressure (transverse test) in excess of 3,000 pounds.

The pipe weighs less than extra heavy steel pipe, ranging from 3.17 pounds per foot on the 1½-inch size, to 26.33 pounds per foot for the 6-inch size. This gives a saving of from ½ to 2 pounds per foot.

All pipe is treated at 1,000 pounds cold water pressure before leaving the plant. No plugs are used. All full lengths of pipe are threaded at each end and each short length at one end, with Briggs standard threads and conforms to the American stardard, being checked with gauges as made by Pratt & Whitney. Each thread is also gauged as to the length of thread on the pipe with a tolerance of one thread, plus or minus. This pipe has been tested to destruction with the following results:

	Bursting Pressure (Pounds)
1½-inch	4,000
2 "	4,050
3 "	3,800
4 "	3,050

Eight 6-foot lengths of this pipe were made up with the couplings of the same material, giving a total over-all length of approximately 49 feet. This length of pipe was supported approximately 6 inches from the end and showed a deflection of 16¼ inches. With a weight of approximately 170 pounds, carried in the center of the pipe, the deflection was increased to approximately 24 inches.

Two 6-foot joints of the pipe supported on 11 foot centers carried a load of 3,003 pounds with a deflection of 1⅞ inches. In a deflection test on the pipe, using single joints supported 3 inches from the end giving a center to center measurement of 5 feet

*Manager, Illinois plant, American Radiator Co., Springfield, Ill.

6 inches, the 1½-inch pipe showed a deflection of 1¾ inches before breaking.

The 4-inch pipe showed a deflection of $\frac{1}{8}$ of an inch before breaking. In each deflection test, the pipe was turned 180 degrees after the first deflection test and in each case, the pipe came back to perfect alignment.

This pipe has been installed on run-down lines, contact plant lines, acid sludge lines, water and steam lines and used as connections around the continuous treating plants with uniform success.

This new pipe will be stocked at convenient points adjacent to the oil fields for pick-up deliveries.

Establish Air Mail Service Chicago to Tulsa

CHICAGO, March 24.—Over night air mail delivery between Chicago and Tulsa will be accomplished shortly, according to an announcement by National Air Transport, Inc., Chicago. N.A.T. announced at the same time the early inauguration of over night mail service between Chicago and Detroit.

Already the night air mail planes between Chicago and Dallas land at Ponca City and Oklahoma City, Okla.

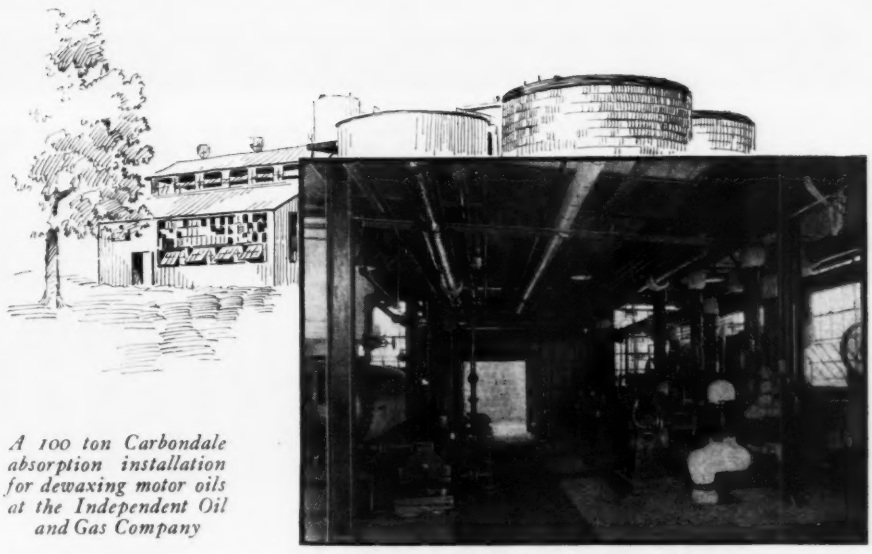
All the schedule requires is that north bound mail from Tulsa reach Ponca City in time to connect with the plane from Dallas, due at 10:15 p.m. The Tulsa plane will remain in Ponca until it receives mail from the south bound plane from Chicago, due at 4:10 a.m. Then, with mail from both north and south, the Tulsa plane will return in time for the first morning delivery.

National Air Transport officials suggest that it may be three months before the lighting is completed and the service ready to start.

Natural Gasoline Papers Printed

LOS ANGELES, March 23.—Proceedings of the fall meeting of the California Natural Gas Association are now available in printed form at $1 a copy. Copies can be obtained from Paul D. Barton, secretary of the association, 701 South Palm Ave., Alhambra, Cal. George L. Ratcliffe, General Petroleum Corp., is president of the association and H. L. Eggleston is vice president. The booklet contains the proceedings of the two-day meeting held in Los Angeles Nov. 15 and 16. Some of the papers presented at that meeting were published in NATIONAL PETROLEUM NEWS.

LOS ANGELES, March 24.—During week ended March 10, notices of intention to drill 10 new wells in California were filed with the department of petroleum and gas, Calif. State Mining Bureau; four were to be drilled at Long Beach. To date, 210 new wells have been started compared with 279 to same period previous year.



A 100 ton Carbondale absorption installation for dewaxing motor oils at the Independent Oil and Gas Company

Chilling below zero —for better motor oils

Modern refining of motor oils frequently demands temperatures considerably below zero — a demand readily satisfied by Carbondale Refrigeration as testified by numerous installations throughout the country.

Carbondale pioneered the development of modern Wax Plant equipment. Such equipment as Carbondale Chilling Machines and Filter Presses have won the confidence of refiners by their efficient service.

For refrigerating effect, at any desired temperature in any capacity, there is a Carbondale system that will obtain the desired result both economically and consistently.

Write for a copy of the Wax Plant Equipment Bulletin

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Carbondale Refrigeration
CARMACO *for Refiners*

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PORTLAND CEMENT *PREVENTS RUST!*

TNEMEC PAINT has a *PORTLAND CEMENT* base

Portland Cement has long been recognized by chemists and engineers as probably the greatest of all rust preventatives. The best evidence of this has been afforded in the instance of steel bars used as reinforcing in concrete. Clean bars used for this purpose remain without rusting indefinitely, and even if the metal has already begun to show rust, the corrosion is halted and the rust already formed is absorbed by the cement.

TNEMEC PAINT — composed of pure linseed oil, into which Portland Cement is introduced by a patented process — possesses all of the virtues of Portland Cement as a protector of iron and steel. It furnishes a complete, tough "coat of cement" which not only prevents the rusting of new metal but promptly halts the rusting action on surfaces already coated with incipient rust. TNEMEC applies easily with brush or spray, covers well, and is exceptionally durable.

Why not give your steel structures this positive protection? TNEMEC Paint is carried in stock at all Continental stores.

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CONTINENTAL

Gaging Wells on Lease Tanks Avoids Sulfur Gas Poisoning

By Paul Wagner
N. P. N. STAFF WRITER

View in Yates field, Texas, showing Mid-Kansas Oil & Gas Co. lease tanks equipped with gaging wells and stacks for carrying off hydrogen sulfid e gas

GAS TIGHT lease tanks equipped with gaging wells are being used by Mid-Kansas Oil & Gas Co., and some of the other west Texas operators, to afford protection for their gagers from hydrogen sulfide poisoning on Yates field oil producing properties.

Installations of this type are designed entirely for the convenience of workers and for the elimination of the serious human hazard generally prevailing. They have little, if anything, in common with methods to be worked out for the handling of the more complex problems of equipment corrosion or the treating of oils to eliminate sulfur compounds. These problems will be discussed separately at another time.

Gaging wells may be made of a joint of 6-inch or 8-inch old casing, cut to proper length and placed in a vertical position directly beneath the gage hole. Parkersburg Rig & Reel Co., which has supplied Mid-Kansas Oil & Gas Co. with most of its 500-barrel bolted steel stock tanks for use in Yates field, has equipped these batteries with such devices and is also manufacturing them for sale generally.

The gaging wells mentioned are used in conjunction with stacks placed on the tops of the manhole domes of tanks, as shown in an accompanying picture. They serve to allow the escape of hydrogen sulfide gas into the air above the head of any worker who finds it necessary to mount the roof of a tank so equipped.

A stack of this type is the only outlet for hydrogen sulfide from the lease tank as the gaging well forms a liquid seal in the oil and prevents escape of vapors through such a channel. Depth of oil rising in the tank may be measured through the gaging well without danger, or discomfort, from the top.

Methods of installing gaging wells differ somewhat, although all follow a general principle of bringing about a liquid seal as oil rises in the various tanks similarly equipped. In some installations, the lower end of the gaging well is slotted for several feet and made fast to the tank bottom with brackets, or otherwise; in others, the lower end of the gaging well is supported on a frame several feet off bottom. Slotting is not necessary in such installations as the last mentioned. The top end of the installation is flanged, gas tight, to the bottom of the gage hatch.

A discussion of the use of gage wells by H. C. Fowler, petroleum engineer of the United States Bureau of Mines, Department of Commerce, is contained in a report of investigation recently issued from Washington. In it Mr. Fowler says that "any internal pressure, or vacuum, on a gas tight tank will cause a small rise or fall of the fluid level in the well relative to the fluid level in the tank.

"For example, one ounce of internal pressure on a tank containing oil of 35 degrees A.P.I. gravity, at 60 degrees Fahr., will raise the level in the well two inches. One ounce of vacuum would depress it an equal amount.

"If the tank is equipped with vacuum and pressure relief valves, thereby keeping the pressure in the tank moderately uniform, the difference between the gage in the well and the actual fluid level in the tank will be relatively constant. For determining estimates of daily well or lease production, this will be accurate enough for the purpose of the gage in some cases.

"Some companies have placed a few perforations in the top of the well, below the tank roof, in an effort to overcome the discrepancy; although this will keep the two fluid levels equal as long as the gage hatch is closed tightly it has been found that upon lifting the hatch the equilibrium will be unbalanced as soon as the small amount of gas in the well has escaped; there will be atmospheric pressure on the fluid in the well and atmospheric pressure plus the vapor pressure inside of the tank. For this reason, there is little or no advantage gained in placing holes in the top of the gage well. Moreover, they allow some poisonous vapors to escape upon opening the gage hatch."

Mr. Fowler's studies developed that for pipeline runs, or wherever accurate gages are required in a vapor tight tank equipped with a gage well, the surest method is to place a water manometer, or U-tube, on the tank, conveniently adjacent to the gage hole. At the time of gaging, the difference between the internal and external pressure is read.

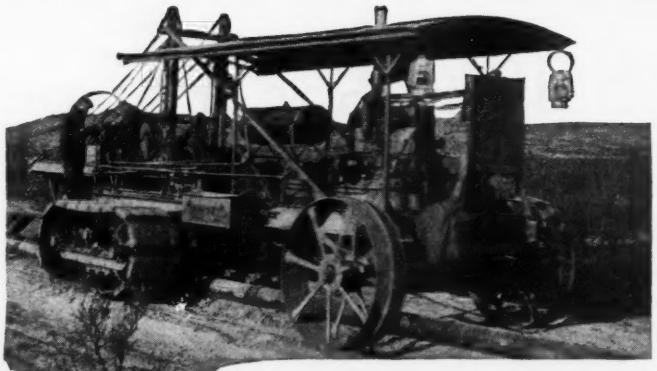
"These pressure differences," he says, "are readily converted into correction factors of fluid level in the tank. In fact, the scale on the manometer can be calibrated for any desired gravity of oil and the plus or minus factor applied to the gage reading directly. A draft gage would give closer readings than a manometer, if this is desired.

"More than ordinary care is required on the part of the gager to note whether the correction factor is plus or minus; but the protection against poisonous vapors is greatly increased.

"Some tanks have been equipped recently with various designs of automatic tank gages. Where these are used the hazard to the gager from H_2S (hydrogen sulfide) and other vapors ceases to exist."

For companies that require "outage" gaging on their tanks, a suggestion has been offered, which is the provision of a tank roof with gas tight window, or dead light, capable of withstanding the maximum pressure of the tank; the bob and tape to be lowered through a small gage hole nearby, provided with some suitable arrangement to prevent the escape of gas. Some studies in design would have to be made, according to Mr. Fowler, to obtain a deadlight that could be cleaned easily of any accumulations of oil or dirt on the under side of the glass.

Discussing the cleaning of tanks, Mr. Fowler points out such a task should always be under-



Setting the Pace!

Lines to new pools are invariably planned hurriedly. A sudden production must be handled quickly. So naturally, in a recent emergency, the Illinois Pipe-Line Company rushed five new Buckeyes to the Yates field in Pecos County, Texas.

Buckeye Pipe-Line Ditchers

are reliable. Experience proves that they are the only ditchers that meet *all* oil-field requirements. Right down the line at the rate of a mile a day is not unusual performance for them. Buckeye users have learned to expect such service in any reasonable digging.

THE BUCKEYE TRACTION DITCHER CO.
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There's a Buckeye Sales and Service Office Near You

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BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
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Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
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BETHLEHEM STEEL COMPANY, *General Offices, Bethlehem, Pa.*

District Offices
New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Louis San Francisco
Los Angeles Seattle Portland

taken with considerable forethought. After a tank has been drained of all the oil that will flow or can be pumped out of it, the bottom will be covered with a layer of residue, varying in depth from several inches to several feet—depending on how long the tank has been in service and the kind of oil that has been stored in it.

Even after removal of all the residue that may be "floated out" by washing with water, and the thorough steaming of all hatches or manholes open, it has been found surprising by Mr. Fowler how tenaciously the vapors cling to tank interiors.

"Also," he says, "the residue may contain many volatile hydrocarbons and other gases that will become apparent only when the mass is stirred or when men begin to move about in it.

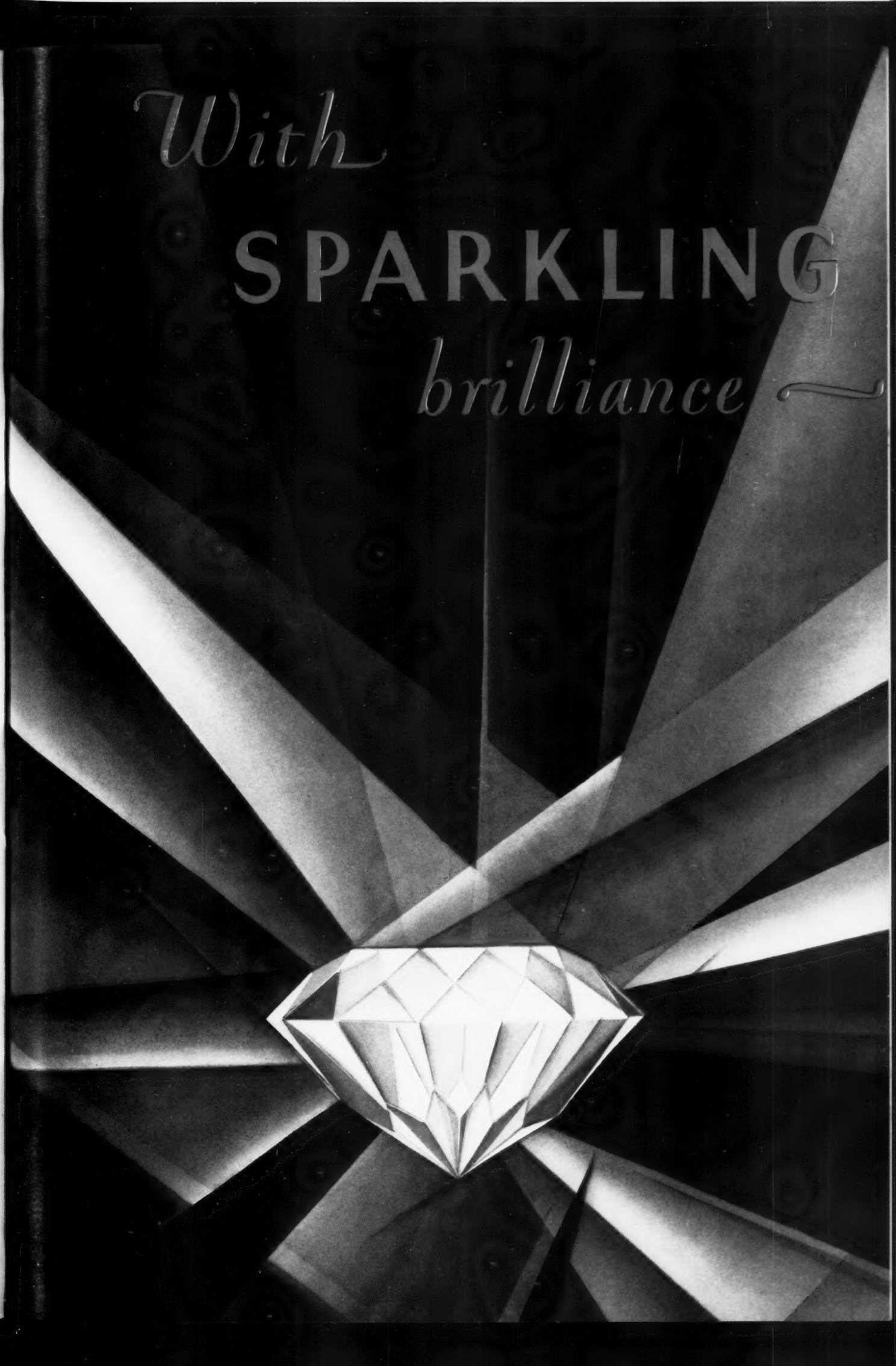
"Whenever possible, it is advisable to have a regular tank cleaning crew who have been trained in this work and who work together effectively. The men become accustomed to working with breathing equipment and, under a competent foreman, soon learn what precautions should be taken. When a new man joins the gang he should be given the benefit of the experience of the older members."

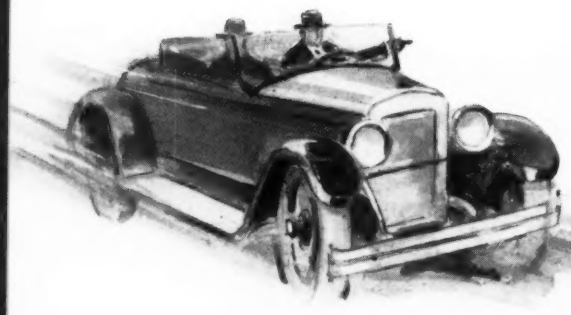
Mr. Fowler points out that tank cleaning, or entering tanks for any purpose after they have contained high sulfur oils, invariably calls for the use of hose masks. He says he finds canister masks are not advisable, because high concentrations of gas are likely to be encountered regardless of the amount of preliminary washing, steaming and venting.

"Lengths of hose up to 150 feet have been used satisfactorily," says Mr. Fowler, "in tank cleaning operations. This amount of footage will allow a man to move about over as great a radius as is necessary in the largest tanks.

"Although the 1-inch hose is treated to withstand the action of oil it is advisable to keep it off the bottom as much as possible. This may be accomplished by stringing light sand line on the posts which support the roof at a height just above the head of a tall man. The hose then can be hooked on this line, with sliding hooks made of copper.

"Very often one or more sheets of the bottom ring are removed prior to cleaning a tank. This allows additional ventilation and the residue can be removed through the opening with the use of scrapers and drag line operated from the outside. Care must be taken when cutting rivets that a spark will not be caused which may ignite inflammable gas, if such is present. Men working inside of tanks should not only take precautions against poisonous gases but should be very careful about fires and explosions. The atmosphere inside of a tank that is being cleaned is likely to be an explosive mixture."


With
SPARKLING
brilliance



a NULTRA BOWL *radiates the purity of your gasoline . . .*

WITH all the flashing sparkle of a diamond, the genuine "Nultra" bowl on G & B Visibles radiates the water-white clarity and purity of your gasoline.

It makes your product easier to look at—also easier to sell. It displays your gasoline the way you want the motorist to see it—clear, sparkling, brilliant.

Do not confuse "Nultra" with mere colored glass bowls. There is a big difference. Colored glass cylinders give an undesirable disguise to gasoline that has discolored. But the genuine "Nultra" bowl, which is made of a special glass that bars out the actinic light rays, prevents discoloration.

"Nultra" cylinders are supplied, at no extra cost, on all G & B Visibles when so ordered.

GILBERT AND BARKER
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PUMPS AND TANKS FOR THE OIL TRADE
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A booklet telling all about "Nultra" and the other G & B features shown below will be gladly mailed on request. Please state whether you are interested in wet hose sight measure visibles or in mechanical measure models.

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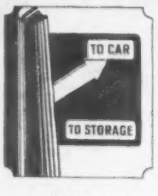
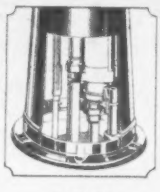


SEMAPHORE SIGNAL

FAST, DEPENDABLE PUMPING UNIT

EASY TO CLEAN CYLINDER


EASY TO INSTALL

AMPLE ADVERTISING SPACE

Five More Companies Join Fight On Unprofitable Dealers

Staff Special
CHICAGO, March 22

SECRET concessions to retail dealers in gasoline and motor oils are becoming harder to get from the large oil companies and major factors in the market.

Of the eight integrated oil companies in the competitive tank wagon market in Chicago and vicinity, five say their dealer proposition for 1928 is stricter than in 1927.

Except for Shaffer Oil & Refining Co., whose change of policy was announced at the meeting of Illinois Independent jobbers in Springfield recently, the companies revising their programs can not be mentioned by name. The details of Shaffer's new proposition have already been set forth in this publication. Statements by sales executives of the other companies will have to remain anonymous.

"We are doing it differently this year," said one sales manager, with a sharp pencil in his hand, looking up from a tabulation of figures that ran into four decimals. "Sometimes I am ashamed that our outlet for gasoline does not adequately cover our sales territory. Our gasoline is a little harder for the motorist to find than I would wish. But after all we are in business to make money. It does no good to serve the public unless they can be served profitably, and every one of our resale accounts nets us a little money.

"Service stations are too thick. I believe they run about one to every 80 automobiles; at least in this territory. That can not last. Some of these stations must go. When we select a dealer account we try to pick one that has a chance to stay in the business. We get a conservative estimate on the value of his location; an authentic report on his credit and his title to the land his business occupies, and we sell him on the idea of buying his own underground tanks. They are permanent improvements.

"We do lend them pumps. But that is where we are getting more strict. We put up light posts. We pave driveways. There is no particular thing we will not do in the way of equipping a dealer, but there is a certain very positive limit on how far we will go. Of course we try to keep each dealer from knowing where that limit is, and we never give one more than he asks for. We turn them down when they ask for too much.

"'Too much' is fixed at ¼-cent a gallon figured on the dealer's last year's business on gasoline only. Motor oils are a separate proposition. All the equipment we lend him and the upkeep as well as the installation charge and the advertising helps we supply him, must stay inside of ¼-cent a gallon or we do not trade. Say a dealer sells 500 gallons a day. (He is a good one.) That is 15,000 gallons a month or 180,000 gallons a year. He can get $450 worth of installed equipment and no more."

* * *

"EVERYBODY in the oil business knows pretty well what the quantity discount agreement of the Standard of Indiana is," said a district sales manager Thursday morning. "Well, we are not quite that lenient. We do not quite meet the Q.D.A. Our monthly refunds are like those of the Q.D.A., but we pay no attention to the annual refunds. We never paid ground rentals.

"We are getting stricter than ever. We are about to quit putting out equipment entirely. We still let customers have pumps and tanks if we can get them, but there are no new ones because the headquarters office has cut off the appropriation.

"What is more, we have deliberately 'pulled' some pumps and tanks recently because they were not netting us anything. Of course we let other customers use that second-hand equipment where the gallonage justified it, but that is all we have to offer, indefinitely.

"Figure a pump at $110, a tank at $60, installation cost at $50 and any kind of an electric sign will bring the cost per dealer up to $300. Some of our competitors have said they will not put out a pump, tank and sign to any dealer handling less than 10,000 gallons a month. But I am forced to say that a 10,000-gallon dealer can not get a pump, tank and sign from us."

A sales executive of one of the most extensive marketers in the United States, carefully weighing his words, contributed the following to the 1928 basket of open secrets:

"Our company has spent a great deal of money to tell the public about our products. We have also expended a great deal in making our products available throughout the states where we do business. Dealers in Chicago and elsewhere come to us every day, wanting to sell our merchandise and we have to disappoint them. They want us to give them the same kind of margins and refunds that our competitors give but we are obliged to inform them that our proposition is firm.

"We do business with retailers exactly on the terms established by the Standard Oil Co. of Indiana, known as the Q.D.A., except in Chicago, where the competitive market structure is so demoralized that we have to deviate from it to retain desirable pieces of business sometimes. However, in Chicago as well as elsewhere, we are not taking on dealers very rapidly. We have about all we need.

"THE people we hope to serve know what our products are. They know where they are to be had. Sales effort is expensive and it takes sales effort to sign up dealers. We are not taking on any more just to have the outlet for our merchandise. Each one must be a profitable customer and yield the company a return. Dealer customers too close together are in competition with each other, and dealers too close to our own stations enjoy returns the company might just as well have and probably could get."

A representative of another company of national proportions told his story in terms of results without

P. A. BREWER
United Oil Co. of Boston and Radio Oil Co. of Worcester, who is president of the Independent Oil Men's Association of New England

FARRELL
Truck Tanks

No matter what your needs are, Farrell builds to any capacity, any shape and offers prompt service in filling your order—whether it may be for a single unmounted unpainted Ford tank or a completed fleet of "big ones", mounted, painted, lettered. The truck tank illustrated below is one of the many new styles of Farrell "bus chassis" jobs. Farrell "bus chassis" assemblies present beautiful stream line effects combined with brute strength and long servability.

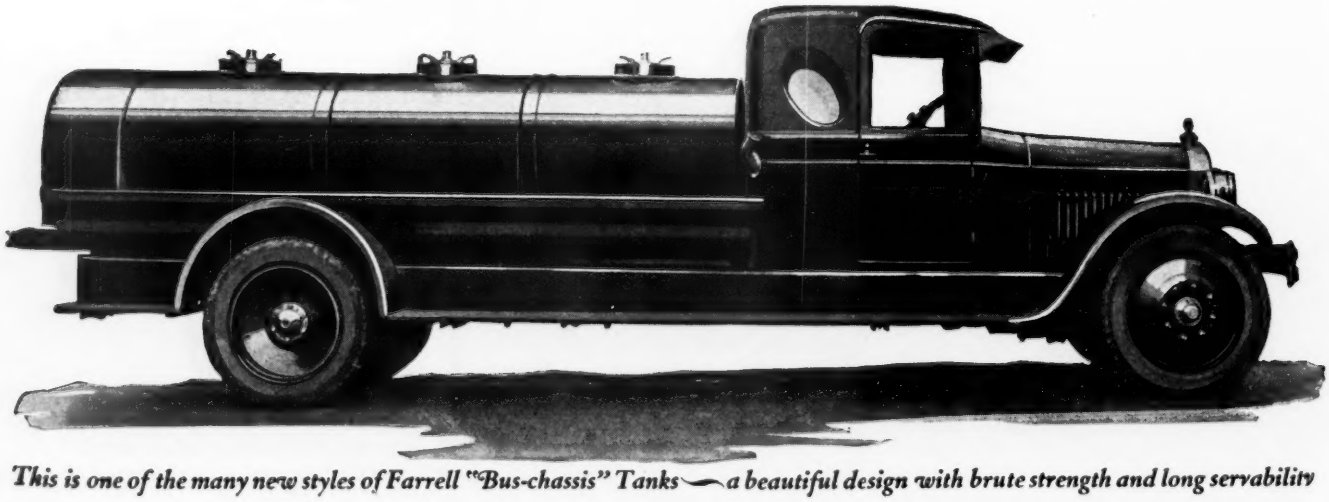
Farrell's method of designing and building truck tanks embody many exclusive advantages, such as:—**Flexible Tank Construction** (separate couple-banded tanks give longer service and lower up-keep)—**Cushioned Steel Underframe** (takes the road shocks)—**Positive Acting, Controlled Safety Valves** (you can't leave them open)—**Double Safety Bumper Bar** (a real protection)—**Steel Bucket Box** (lots of room, wide door space)—**Sturdier Built** (strength, not excessive weight)—**Lower Over-all Height** (low center of gravity, greater speed, no sway).

—it will pay you to get Farrell's prices and details.

FARRELL MANUFACTURING COMPANY

***Works*—Joliet, Ill.**

Chicago—1213 W. Washington Blvd.
Detroit—5459 Grand River Ave. Cleveland—4336 Broadway



This is one of the many new styles of Farrell "Bus-chassis" Tanks — a beautiful design with brute strength and long servability

discussing the means by which they were obtained.

"My company the last few months bought the properties and good will of a few Independent jobbers in middle western states. In this way we have fallen heir to a number of propositions that were not entirely to our liking and yet were difficult to dispose of immediately. In a few cases we have been obliged to use drastic measures.

"With reference to equipment loans, in the case of one company we absorbed, we started immediately to cut off dealer accounts that were unprofitable. In the first six months we withdrew more than one third of our outstanding pumps and accessory equipment in that territory and at the same time we increased our gallonage."

The fifth national marketer declares that anything of value that passes from the oil company to the dealer except the actual merchandise is, in substance, a price concession and must be figured by the gallon. He says:

"To determine whether a particular dealer account is profitable is a matter to be determined from day to day. Our district managers have the authority to pass on these matters.

"When we sign up a dealer we find out what he wants in the way of equipment and reduce that desired equipment to terms of dollars and cents. Applying that figure to his last year's gallonage, we determine what that concession amounts to in cents per gallon. Then we add to his regular spread under the tank wagon market in compliance with the established Q.D.A. It shows exactly what his gross spread is per gallon. It is either too much or permissable, and the district manager must decide. What would be too much in one territory is O.K. in another.

"We are protected mainly by a clause in our contracts which names a specific figure (different in each case) below which he may buy no gasoline from us, unless the prevailing tank wagon price in his town actually gets down to that figure or below. In that event the tank wagon price is what he buys at, and all price concessions are 'off'. There are then no more price concessions until normal markets are restored.

"When we supply a dealer with equipment we do not charge him with it until he attempts to sever his relations with the company. Whatever the company supplies a dealer that classifies as a permanent improvement, such as a buried tank, is depreciated at the rate of 20 per cent per year. If he sells our merchandise five years the improvements belong to him. If he quits at the end of the first year he still has 80 per cent of its cost to pay. After two years he owes 60 per cent, and so on."

"How Can We End These Shipping Losses?"

The NILES "Ringseal" Container

Offers an Easy, Immediate Solution

DAMAGED shipments always bring dissatisfaction to customers and soon result in lost sales. The NILES "Ringseal" Container has helped many of America's leading manufacturers to satisfactorily solve this problem. It offers real armored protection in shipping Greases, Oils, Soaps, etc.

A Perfect Seal

One simple operation gives a perfect sea which withstands even most violent abuse. Offered in sizes holding from 25 lbs. to 100 lbs. Any label design can be attractively lithographed.

The Strength of Steel

Let us tell you how ideally this strong, always clean, perfect stacking container is suited for your export or local shipments. Sample container and full details sent promptly without obligation.

Patent Pending

THE NILES STEEL PRODUCTS CO.
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NILES RINGSEAL

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All Gravities · Water White

TRACTOR FUEL

WILLOCK OIL CORPORATION

First National Bank Building · Phone Atlantic 3110
PITTSBURGH, PA.

52 Years Experience · It Counts

Turning Personality at the Pump Into Dollars of Profit

By A. S. James
N. P. N. STAFF WRITER

ABOUT 18 months ago O. F. Self, a young man who grew up in one of Alabama's wide-place-in-the-road towns, walked into the offices of the General Oil Corp. here and all but begged L. Gregory Johnston, president, to lease him the company's Tarrant City two-pump service station.

Arguments were necessary before Mr. Johnston agreed, but finally the lease was signed and Mr. Self drove back to the station, put on his coveralls and went after business. The record to date is a gallonage increase of around 400 per cent, and an income increase for Mr. Self of over 300 per cent!

"That proves my theory that about 95 per cent of a station's success is due to the individual operating it, and about 5 per cent to the company and the products handled, assuming, of course, that the products are uniform," said Mr. Johnston.

How did Mr. Self make this record?

First, let Mr. Johnston tell how he came to get the chance, then let Mr. Self tell how he runs his business.

"We had two stations in Birmingham that were white elephants," Mr. Johnston said. "One of them was the Tarrant City station. The other was in a more advantageous place where three to four times the number of cars passed it than drove by the Tarrant City place. But neither was paying a return on investment.

"One day Mr. Self walked in and asked for the Tarrant City station under the lease plan which we have adopted for a majority of our stations. I wasn't in favor of letting him have the station. I was sick of the place. I all but turned him down.

"One of the boys here put in a good word for Mr. Self, however, and we finally signed the lease. And that took the Tarrant City station off my mind—turned it into an asset."

The station is in the central part of Tarrant City, one of Birmingham's numerous suburbs. The writer drove out to the place with J. S. Finney, who had put in a good word for Mr. Self. Mr. Finney is assistant to Mr. Johnston in looking after the company's various stations.

The accompanying picture was taken about 10 o'clock on a Monday morning. While it is true three-fourths of the cars at the station were Fords, nevertheless Fords use much gasoline and oil. The writer passed two competitive stations within two blocks of Self's place, and, although each station was more elaborate in design, there wasn't a car in the driveway of either place.

O. F. Self (left), operator of the Tarrant City station, and J. S. Finney, representative of the General Oil Corp.

It was at one of these competitive stations that Mr. Self obtained his experience.

"I worked at that station down there for a little over two years as an attendant," he said. "When I quit and took this station under lease, I was getting $125 a month, the most money I'd ever made per month in my life.

"I learned a lot down there by keeping my eyes open. I have been busy on a car and have seen another one drive into the station. The boss would be talking to someone in the doorway, sometimes just a loafer, and the prospective customer would sit and wait awhile, and then drive away without the boss making a move to wait on him.

"When a car hits my driveway I try to be there by the time it is stopped. A driver usually drives to what he wants. If he pulls up near the water hose, I give him water without asking him first what he wants. Maybe that's all he wants, and he drives away, but not before I've had a chance to skoot around to his tank to see how much gasoline he has.

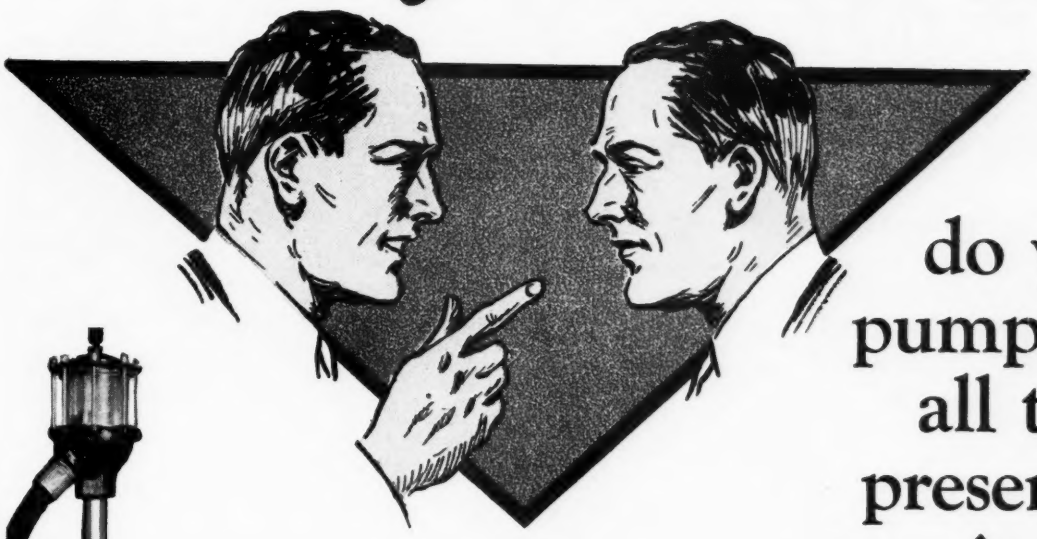
"IF A customer gets gasoline, I make it a point to look at his oil as quickly as possible without delaying him. I don't ask him first if he needs oil. I look, and if he does, I offer my suggestion. If he doesn't need oil I tell him he doesn't. If one is quick and careful in his work, the driver doesn't object to the few seconds required to see about either oil or gasoline, and many times I get a job of draining the crankcase because I promise to get the job done in a jiffy.

"I usually can tell by the way a man drives in whether or not he's in a hurry. I try to get him away as fast as possible. You'd be surprised the number of drivers who think they are in a big hurry. We keep them thinking they are in a hurry by jumping to our work with a snap.

"If a man wants to loaf around I talk to him if I'm not too busy. If he doesn't want to talk, it's all the same to me. I keep my mouth shut. I never let a discussion keep me from waiting on a prospective customer."

View of Tarrant City service station operated by O. F. Self under lease from the General Oil Corp., Birmingham

Ask yourself—



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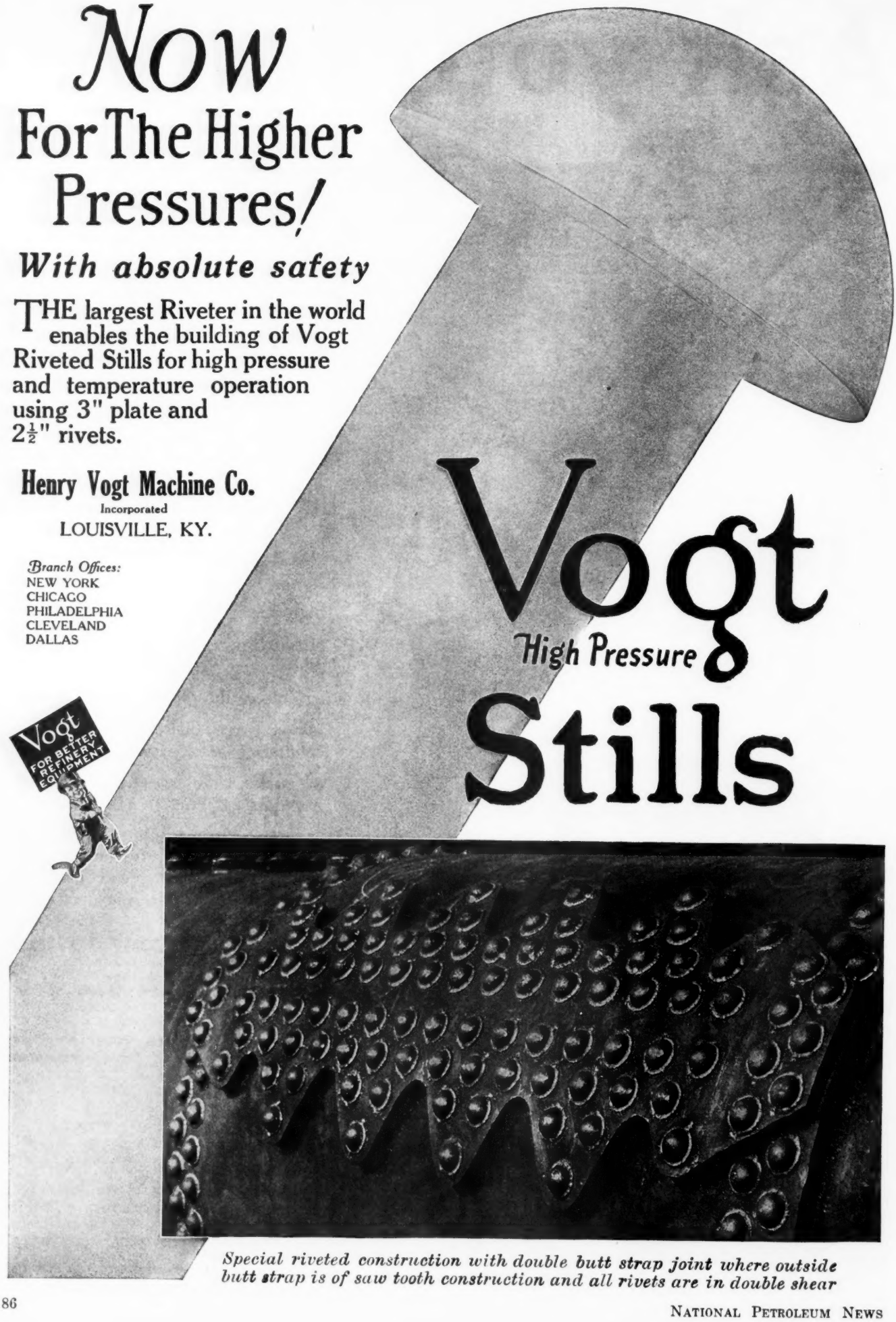

Special riveted construction with double butt strap joint where outside butt strap is of saw tooth construction and all rivets are in double shear

Methods of Minimizing Accident Hazards Of Cracking Plant Operations

By R. Beatte*

Presented before group meeting of Mid-Continent safety directors, Tulsa, Feb. 24.

THE question of cracking still inspection, when considered from various viewpoints, may be easily brought to a logical solution.

To consider carefully the question, the operators' viewpoint will first have to be considered. The operators' viewpoint may be very aptly compared to the Scotchman who gave his little daughter twopence for going to bed without supper, and while she was asleep, went in and took the coin from her hand.

The next morning she came crying to the Scot that she had lost her twopence, whereupon he made her go without breakfast for losing the money.

The attitude of the average operator towards the cracking unit is about the same. Get every possible gallon through it before the unit wears out. To understand this more fully we must consider the fact that to begin with, the initial costs of such units are high. Next, maintenance and repair costs are excessive. Again, operating costs are higher than in other types of stills. The high pressure stillman usually is paid more than others. And lastly the life of a cracking unit is seldom over five years. You can no doubt call to mind shell stills that have been in operation for 20 years.

Considering these points the attitude of the operator towards the cracking unit is this: "I am operating a unit that depends on its operating profits over a period of five years to pay for itself. To make it a paying proposition it must be run a maximum number of days, and shut down a minimum number. Keep it running at all costs, or it will be obsolete before it is worn out. Conditions that would ordinarily warrant the shut-down of a shell still, will have to be passed over until scheduled shut-down."

Of course tempering all this, there is, or should be the consideration of the operators' safety from fire and explosion, and the safety of the equipment. However, all things weighed in the balance tend to make the operator just a little inclined to "keep her running," when she should be shut down. It is the mission of the safety man to throw his weight, literally speaking, in this balance and bring cracking still operation to a safe, happy medium.

This apparent reluctance to shut-down for repairs is due to a number of reasons besides the one already noted. First, an unplanned shut-down involves a complete clean-out which costs just about as much as a planned clean-out. Naturally, an emergency shut-down brings up cleaning costs per barrel. Second, cracking plant operation dovetails into the regular refinery balance, and any emergency shut-down throws the whole refinery out of balance. Third, the heating up and cooling off period costs real money, in the shape of extra fuel. From all these reasons, one can readily see that the unplanned shut-down has many and far reaching effects.

The executive's attitude is, in a large measure, similar to the operator's. As a general rule he is interested in stock charged, distillate produced, and cost per barrel of finished gasoline. He is not in a position to do otherwise than express an opinion on the question involved. Detail of operation is largely left up to the operator, the executive merely dictating general policies in line with market conditions.

The safety director, assuming that he is not familiar with cracking plant operation, might well be expected to wring his hands, and gnash his teeth at these conditions. A composite of all safety directors might well be suspected of thinking along the following lines:

"HERE is a refinery operation that is potentially dangerous. Because of extreme conditions of temperature and pressure exerted on a highly inflammable product, any trivial failure in the equipment immediately becomes critical. Yet my hands are tied. I can't do anything concrete towards bettering safety conditions because the process is complicated and I am unfamiliar with it. However, I can reach the operator through preaching to him the principle, and I had better do this until some shorter road to the solution is found."

And then last, and very often, the least wail comes from the mechanical department or the engineer.

Suppose we listen to what they have to offer on this question. They say, "Yes, we give the unit an inspection after every run, and every third run we go over the equipment more thoroughly, if such a thing is possible. We test out before going on stream with a cold oil pressure, equal to four, or five times the operating pressure. What we consider worn parts are replaced. As far as possible every little detail is covered periodically.

"But we have no means of recognizing hidden defects, as casting or forging flaws. We have no means of recognizing internal corrosion and erosion, which might occur during running. We have no jurisdiction whatever over operating conditions, other than in an advisory capacity, and lastly we have no control over what is referred to as 'the human element,' and the consequent hazards attached to the solving of 'the human equation.'"

Let me assure you at this juncture of one point. Please remember that I have tried to reflect in the

*Mechanical Engineer Texas Pacific Coal & Oil Co.

J. G. LYONS

Prominent independent producer of the Okmulgee district recently was elected president of the Okmulgee District Oil & Gas Association, succeeding E. P. (Tex) Jones who held the office for two terms. Mr. Lyons has pioneered in several pools of east central Oklahoma and has been active in the work of the association since its organization

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above characters my thoughts if I were in their positions. They were fabricated out of thin air, to represent the parties involved. You will meet them again later.

To become a little more concrete, what makes a cracking unit dangerous? Is it design? No. As an engineer, I would say "no". Modern cracking units were only brought to their present point of development by constant change and improvement.

Modern science has made them strong enough, in terms of stress and strain, to answer the purpose for which they were built. New developments in casting and forging, the birth of new alloys, the creation of new metal treating processes, and the astonishing development in pumps and other mechanical equipment have all contributed to the phenomenal advancement of the last five years. It is true mechanical equipment has been found defective on cracking units, but not in basic design. The fault has lain in the manufacture. Speaking as a whole, the design is absolutely safe but individual defects in material must be watched for.

Well, is it operation then that lets in the hazard? Broadly speaking, no. The present method of operation is the result of years of patient development. Methods differ, it is true, but different methods are necessary for different cracking systems. Dangerous, faulty methods have automatically eliminated themselves. No operator is going to sanely adopt a method or practice that has resulted in heavy losses, or disastrous explosions. The methods employed then are basically right, at least as near perfection as practice and experience can make them.

How about tube failures, and valve, and fitting failures, with consequent fires? These failures may have been forestalled by shutting down in the middle of a run and replacing them, but, "H—!" the operator says, "who wants to shut down in the middle of a run?"

This is the point then! Not basic methods of operation but unusual conditions in the individual unit brought about by unusual operating conditions.

Can it be that elusive quantity, called the "human element"? To a great extent, yes. I would venture to say, and I feel sure that 90 per cent of the operators will agree with me, that carelessness, our great, natural enemy is responsible for the largest portion of cracking plant accidents. You know it is said that "familiarity breeds contempt". This homely maxim applies very aptly to our argument. A new man on a cracking plant operating crew, invariably says to himself, or somebody else, "Oil and vapor at 900 degrees Fahr.—and 750 pounds pressure, hot dog if she ever lets go it will be too bad. But she don't "let go," so after a few weeks, or months on the job, he gets on familiar terms with old man "Potential Trouble," which breeds a certain contempt. The same spirit was manifest in the war.

I experienced it myself. I waited for five months for something to let go, and then got tired of waiting because nothing happened. That constant alertness on the part of the operators, so essential to safe operation, gradually wanes and pretty soon "she lets go" some place, and gentlemen, when a cracking unit lets go, you pick up parts all over the country.

Now let us bring together the operator, the engineer, and the safety director, and see if they have benefited by the foregoing.

The operator says: "Well, I see now that I will have to temper my operation with prudence. It is true, I have run tubes hot, I have run with leaky connections, I have run with a number of things I shouldn't run with, just for the sake of making a little time. I guess I had better get together with someone and iron these matters out before something lets go. The few extra hours I gain in a month could easily be offset with a bad fire or an explosion."

The engineer says: "Perhaps because I have a lot of confidence in the design and manufacture of this unit I have been just a little casual in my inspections. Next run I had better set up a more complete record of wear, and institute a more rigid system of inspection. I have been depending too much on the individual perfection of replacement parts. I think I had better talk to the operator about this."

The safety director says: "Well, perhaps I didn't realize what these fellows are up against, and I can see my job cut out for me. If those stillmen need training in safety, to keep them on their toes, that's my job, and I had better get busy. I see the operator, and the engineer, standing over there, I guess I had better get over, and talk to them, they most likely, have not considered this point of view."

Gentlemen, we are continually under a strain. Should you have on your shoulders the responsibility of as much potential destruction as is embodied in a cracking plant, you would be worried too. The only solution of the problem as I see it, lies in the getting together of the operator, the engineer, and the safety director, with a mutual thrashing out of their individual problems. The attitude of the engineer, and the operator, as a whole, towards this arrangement I can not vouch for. However I can say, and I speak from experience, that the problem is distinctly not a one-man job. The issues are diversified, and foreign to one another. The benefits to be derived are widespread and multiple. Let's get together.

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TULSA DALLAS NEW YORK

Our Industry — A Page of Facts and Personalities

National Petroleum News

By Paul Wagner

Dr. E. H. Sellards of the Texas Bureau of Economic Geology at Austin is in receipt of information that indicates the drill penetrated Pennsylvanian age formations from 760-1050 feet in the T. C. Hadley test on the Ross ranch, Sec. 6, TWNG block 14, Sutton county, in the Edwards plateau region.

After examining diamond core cuttings from the test well, Dr. Sellards wrote Mr. Hadley:

"At present I will not attempt to make more than a general reference of this material to the Pennsylvanian. The presence of *Fusilina* through the section leads me to believe that it is probably the upper Pennsylvanian. The rock has, to be sure, many resemblances to the Bend, but in the Bend *Fusilina* is extremely rare, so that its presence here inclines me to believe that the core is still within the upper Pennsylvanian."

Identification of Pennsylvanian beds at the shallow depth mentioned in the Sutton county part of the Edwards plateau region will encourage wildcatting for possible oil bearing reservoirs in the geological section immediately below present drilling depths.

* * *

From London comes the news that N. Ord Watson, general superintendent of Royal Dutch-Shell group operations in Venezuela, is now on his first trip to England. The Shell operates in the Maracaibo region through the Carribean Petroleum Co., and the Venezuelan Oil Concessions. Mr. Watson, who is an American petroleum engineer, was with the Mexican Eagle Oil Co., Ltd. (El Aguila) on the Isthmus of Tehauntepec from 1920-1923. He went to Venezuela in the summer of 1924 as field manager of the Lago Petroleum Co., returning to the service of the Shell group in 1926.

* * *

J. L. Davidson and T. W. Neeley of the Torsion Balance Exploration Co. sailed from New York for Maracaibo, recently, to replace M. H. Milner and Emil Gundermann who had been engaged in geophysical work for the Orinoco Oil Co., in Venezuela, the last six months.

* * *

M. D. Hipp of the Shreveport division of the Humble Oil & Refining Co. is leaving for Roumania, where he will be identified with field operations of the Standard Oil Co. of New Jersey.

HARRY L. NORRIS

The accompanying picture is a true likeness of Harry L. Norris, chief scout of the Prairie Oil & Gas Co., Tulsa, but it does him one injustice—it shows him in a leisurely attitude. That isn't natural. All scouting activity of the Prairie in Oklahoma, Kansas, Texas and New Mexico comes under Norris.

Norris was born in Ohio but made his start in the oil and gas industry in Pittsburgh. Later, he went to Tulsa, where in 1913 he was identified with the Oklahoma Natural Gas Co. and the Devonion Oil Co. In 1916 he went with the Prairie as scout in the Arkansas City-Augusta, Kansas, district. Three years ago he became chief scout. He is married and has one daughter.

* * *

J. H. Hassheider, production engineer in the Tulsa organization of Pure Oil Co., has been transferred to the Texas division at Fort Worth. James Thompson, Seminole production engineer, has been transferred to the El Dorado, Ark., district.

* * *

Cecil Keller of the Wichita Falls geological department of The Texas Co. announces the recent arrival of a son, Bill Merle.

Watts Brothers Oil Co., with offices in the First National Bank bldg., Houston, has been formed by E. E. Watts, Sam Watts and James Watts, all previously identified with the Navarro Oil Co. E. E. Watts resigned as vice president and treasurer of the Navarro to devote his time to the new company. He retains his stock interest in Navarro and will continue as a director. E. E. Kerr, also leaves the Navarro to be secretary-treasurer of the new company.

* * *

P. J. Reilly and son, P. J. Jr., New York oil operators having extensive interests in Mexico, have returned home after a business trip to Tampico.

* * *

W. M. Harper, assistant in the Earlsboro, Okla., office of Magnolia Petroleum Co., under Supt. J. W. Tipton, has been transferred to the Maud field office.

* * *

George B. McCamey of Fort Worth, drilling contractor and independent producer in west Texas, has been visiting in Miami, Florida.

* * *

R. J. Stipek, formerly at Amarillo for the Gulf Production Co., now makes headquarters at Fort Stockton, Pecos county, Texas.

* * *

J. T. Stover, a principal in the Alamo Drilling & Leasing Co., San Antonio, has been making frequent trips to Houston the last few weeks in connection with plans for starting a wildcat test on the Sal Viejo prospect in the lower Rio Grande valley.

* * *

The Richmond refinery of the Standard Oil Co. of California has a bowling association, the officers of which are as follows: E. G. Griffin, president; R. H. Cornell, sr., vice president; H. M. Flint, treasurer; and A. G. Schimpff, secretary.

* * *

R. L. Beckelhymer, geologist, has been checking over wildcat acreage in the Mississippi-Alabama region for the Phillips Petroleum Co., Bartlesville.

* * *

O. C. Graves, who is now drilling a wildcat test near Jackson, Miss., on a block of 8000 acres, formerly operated at Burkburnett and elsewhere in Texas. When a younger man he was known as the "kid mayor of Oregon" because of his holding the executive reins in Newport, Oreg.

* * *

The Mid-Continent Oil & Gas Association has moved its offices to the third floor of the new Tulsa building. Former offices were in the Cosden building. The Tulsa building houses the Tulsa Club, the Natural Gas Association of America and a number of Tulsa civic organizations such as the Chamber of Commerce.

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J. L. SANFORD
Standing at Left
L. P. LAMBERT
Standing at Right

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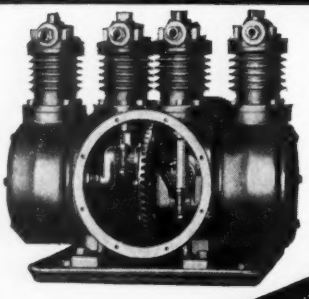

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March 6, 1928

REFINING

Distillation of Hydrocarbons—Merle R. Meacham, Elizabeth, N. J., assigner to Standard Oil Development Company, a corporation of Delaware. Filed June 25, 1928. No. 1,661,189.

Apparatus for Cracking Oil—Royal S. Pershing, Fort Worth, Tex. Filed Oct. 28, 9124. No. 1,661,196.

Process for the Conversion of High-Boiling Hydrocarbons into Low-Boiling Hydrocarbons—Lazar Edeleanu, Berlin-Charlottenburg, Germany, assignor to Allegemeine Gesellschaft fur Chemische Industrie, Berlin, Germany. Filed June 28, 1926. No. 1,661,565.

Motor Fuel and Process of Refining Oils—Lazar Edeleanu, Berlin-Charlottenburg, Germany, assignor to Allgemeine Gesellschaft fur Chemische Industrie, Berlin, Germany. Filed Mar. 24, 1927. No. 1,661,566.

Apparatus for Treating Oil—Frederick A. Kormann, New Rochelle, N. Y., assignor to United Refineries Company, New York, N. Y. Filed Feb. 14, 1921. No. 1,661,804.

Continuous Process for the Refining of Mineral Oils—Eric Th. Hessle, Lemont, Ill. Filed Dec. 6, 1923. No. 1,661,826.

Catalytic Apparatus—Eric Th. Hessle and Willy Lelgemann, Lemont, Ill. Filed Apr. 26, 1926. No. 1,661,827.

PRODUCTION

Method of Plugging or Packing off Strata in Wells—Harry Moyer Ryder and Leon J. Bailey, Bradford, Pa., assignors to Petroleum Reclamation Corporation, New York, N. Y. Filed Jan. 19, 1927. No. 1,661,270.

Oil-Well-Cleaning Composition—Francis Daly Sullivan, Memphis, Tenn. Filed July 23, 1924. No. 1,661,512.

Fishing Tool—Ferdinand J. Spang, Butler, Pa. Filed Sept. 6, 1924. No. 1,661,638.

Rotary Bit—Anthony E. Carlson, Los Angeles, Calif. Filed May 18, 1927. No. 1,661,715.

Steamer for Oil Wells—Burton W. Seymour, Sr., Jamestown, N. Y. Filed Dec. 3, 1926. No. 1,661,971.

NATURAL GAS

Process of Separating Liquids—Oscar L. Barnebey, Cleveland, Ohio, assignor to American Solvent Recovery Corporation. Filed Sept. 9, 1920. No. 1,661,403.

MISCELLANEOUS

Vehicle Tank—Augustine Davis, Jr., Covington, Ky. Filed May 19, 1924. No. 1,661,324.

Method of Mining Oil and the Like—Ewart G. Sinclair, Maracaibo, Venezuela, assignor to The Midwest Refining Company, Denver, Colo. Filed Oct. 16, 1926. No. 1,661,389.

Method and Means for Mining Oil Sands—Ewart G. Sinclair, Maracaibo, Venezuela, assignor to The Midwest Refining Company, Denver, Colo. Filed Oct. 16, 1926. No. 1,661,390.

Tank-Sealing Means—Charles Frederick Bertschinger, Jamaica, N. Y., assignor to Tide Water Oil Company, Bayonne, N. J. Filed Sept. 29, 1926. No. 1,661,404.

Apparatus for Purifying Gasoline—James P. Johnson, Greensboro, N. C., assignor to Johnson's Purifying Systems, Inc., Greensboro, N. C. Filed Dec. 11, 1926. No. 1,661,478.

Electric Heating System for Oil Pipe Lines—Charles Setzefant, Modesto, Calif. Filed Aug. 10, 1927. No. 1,661,683.

Oil and Gas Separator—Jay P. Walker, Tulsa, Okla., assignor to Guy O. Marchant and C. G. Wells, Tulsa, Okla. Filed Mar. 15, 1927. No. 1,661,685.

Process for Reclaiming Used Lubricating and Insulating Oils—Archibald F. Meston, Poughkeepsie, N. Y., assignor to The De Laval Separator Company, New York, N. Y. Filed Mar. 23, 1925. No. 1,661,731.

Oil Drainer and Cleaner—Elias A. Shadid, Mangum, Okla. Filed Oct. 11, 1926. No. 1,661,972.

Earl Oliver, principal in the engineering firm of Earl Oliver & Co., Ponca City, has returned to Oklahoma headquarters after a business trip to Texas points, including Houston.

Francis De Loyes, formerly of Los Angeles, is now geological adviser to the Turkish Petroleum Co., Ltd., which operates the Kirkuk property in Iraq, making his headquarters at London.

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The following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C., trade-mark specialists.

As an additional service feature to its readers, this journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering. You may communicate with the Editor of this Department, or send your inquiry direct to the National Trade-Mark Company, stating that you are a reader of this journal.

"TRANSLUBO" No. 250,480. Union Oil Company of California, Los Angeles, Calif. For lubricating oils and greases, and waxes of mineral origin.

"EDINGTON E" No. 258,628. Edington Gasoline & Refining Company, Los Angeles, Calif. For gasoline, kerosene, distillate, fuel oil, and lubricants.

"STALEY'S INDEX TO QUALITY" with hand pointing the index finger—No. 258,839. P. M. Staley, Great Falls, Mont. For lubricating oils and greases.

"GRIFFON DOMINA ATTRICTO" No. 256-755. Walter & Co., Rio de Janeiro, Brazil. For lubricating oils.

"SPEEDOLEUM" No. 258,026. The Hickok Producing Co., Toledo, Ohio. For lubricating oils and greases.

"DUMORE" No. 258,204. Wisconsin Electric Co., Racine, Wis. For lubricating oils and greases.

"HI-DUTY" No. 258,945. Johnson High Test Oil Co., Freeport, Ill. For illuminating, motor fuel, and lubricating oils and lubricating greases.

"MAX WELD" No. 237,377. Earl C. Maxwell Co., Inc., Brooklyn, N. Y. For welded metal tanks for storing gasoline, and fuel oil, etc.

"ROCO" No. 252,732. Richfield Oil Co., of California, Los Angeles, Calif. For gasoline, kerosene, and lubricants.

"ROCO" with picture of old fashioned oil lamp—No. 252,733. Richfield Oil Co. of California. For kerosene.

"AGER" No. 255,451. Irwin A. Madden, Springfield, Ill. For gasoline, illuminating oil, fuel oils, and lubricating oils.

"SQUEEKO" No. 255,882. Universal Manufacturing Co., Inc., Washington, D. C. For liquid lubricants.

"EQUATOR GASOLINE" No. 259,442. Max M. Glasser, Chicago, Ill. For gasoline.

"WM. PENN" No. 259,841. The Canfield Oil Company, Cleveland, Ohio. For lubricating oils.

"T. I. E. D." No. 241,413. The Hodson Corp., Chicago, Ill. For lubricant.

"ENERGEE" No. 242,207. The Pure Oil Co., Chicago, Ill. For kerosene, benzine, distillate, and lubricating oils and greases.

"FRANKLIN RUSTAR" No. 248,709. Louis F. Mueller, Buffalo, N. Y. For lubricating and penetrating oil for removal of rust and tar.

"KEEPCO" No. 247,023. Keewaugan Products Co. Inc., North Chicago, Ill. For graphite penetrating oils.

"TIONA" No. 257,567. Tiona Refining Co., Clarendon, Pa. For illuminating oils, motor fuel oils, lubricating oils and greases.

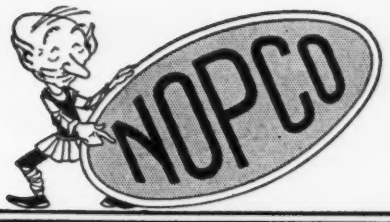
"PENRECO" No. 258,650. Pennsylvania Refining Company, Karns City, Pa. For motor oils, petrolatums, gasoline, naphtha, fuel oil, and mineral wax.

"PRACTICOL" No. 259,618. Calumet Refining Co., Chicago., Ill. For lubricating oils.

"BRULUCO" No. 260,553. Bruce Lubricating Company, Providence, R. I. For lubricating oils and greases.

"HERMOLINE" No. 243,652. Herring-Wissler Co., Des Moines, Iowa. For lubricating oils and greases.

FORT WAYNE, Ind., March 22.—In a 16-week series of industrial programs offered through radio station WOWO here, was S. F. Bowser & Co., Inc., manufacturer of filling station equipment. Its program went on the air the evening of March 8.



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The manufacture and sale of Ford Non-Chatter Oil is *covered by a patent* (the Sorensen Patent). Do you know whether or not you are infringing this?

We can *protect* you against infringement, by showing you how to make the finest NON-CHATTER FORD OIL with full protection under the Sorensen Patent. Send for full information.

NATIONAL OIL PRODUCTS CO.

HARRISON, N. J., U.S.A.

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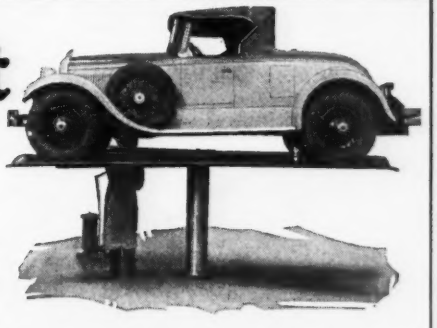
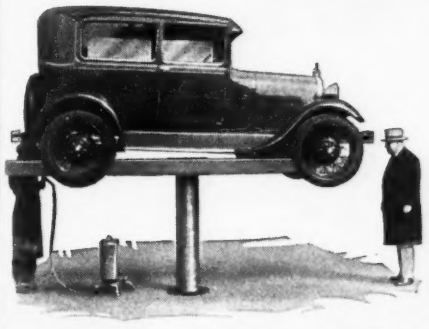
Rotary Lift



Improved Model
New Design
New Construction

A NEW ROTARY CHASSIS LIFT



Free Wheel Type
Designed for
Repairing, Washing
and Tire Service

All Steel and Malleable Construction .. Low Shipping Weight ... Easy to Install ... Low Operating Cost .... Low Upkeep. Send for full information.

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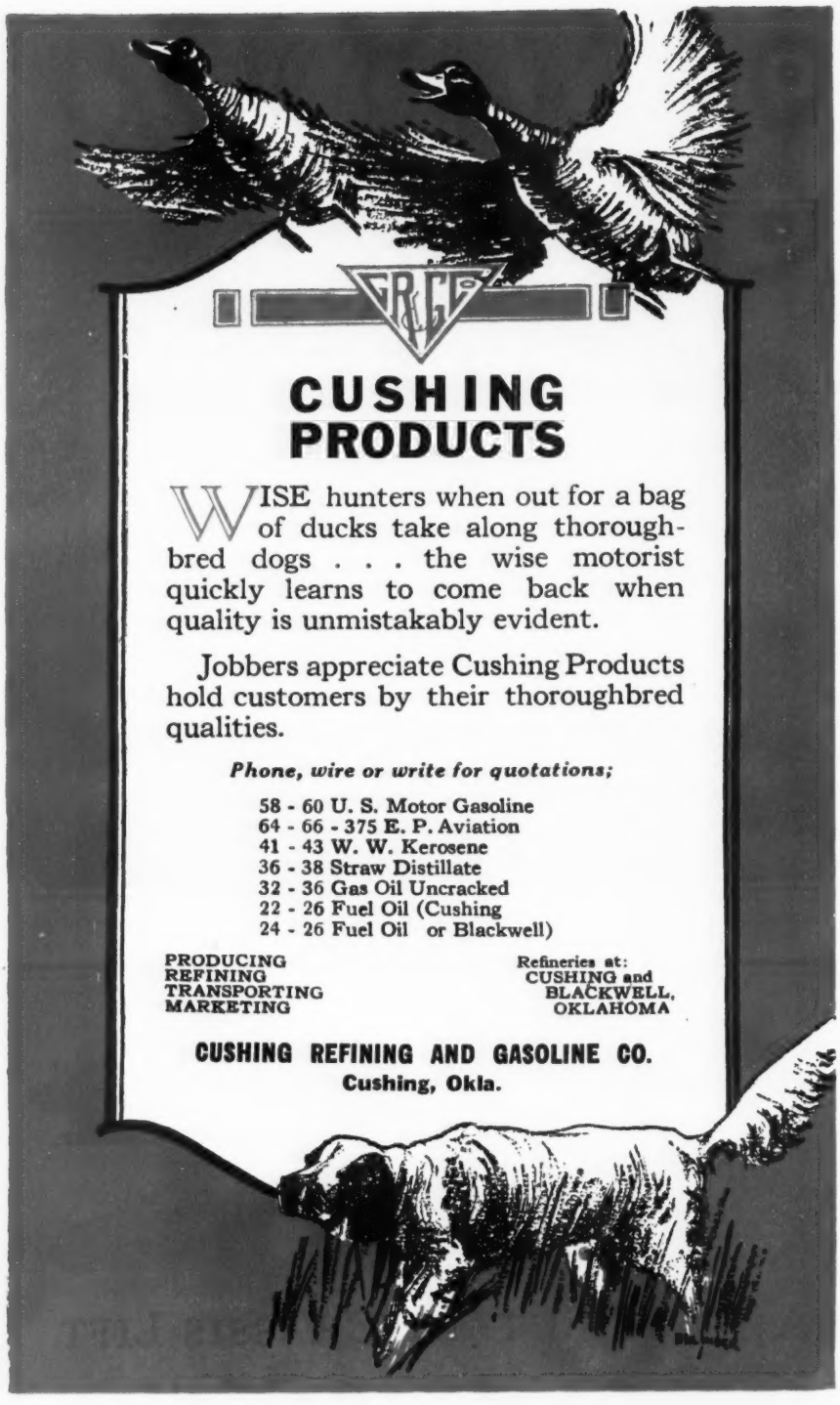

CUSHING PRODUCTS

WISE hunters when out for a bag of ducks take along thoroughbred dogs . . . the wise motorist quickly learns to come back when quality is unmistakably evident.

Jobbers appreciate Cushing Products hold customers by their thoroughbred qualities.

Phone, wire or write for quotations;

58 - 60 U. S. Motor Gasoline
64 - 66 - 375 E. P. Aviation
41 - 43 W. W. Kerosene
36 - 38 Straw Distillate
32 - 36 Gas Oil Uncracked
22 - 26 Fuel Oil (Cushing
24 - 26 Fuel Oil or Blackwell)

PRODUCING
REFINING
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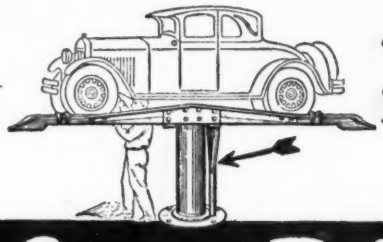
Refineries at:
CUSHING and
BLACKWELL,
OKLAHOMA

CUSHING REFINING AND GASOLINE CO.
Cushing, Okla.

"Quick Service"



"Big Profits"

Safety Lift
16 Beaver Street, New York City

JOSEPH JENSEN
Head field geologist, Associated Oil Co., Los Angeles, new vice chairman for production, Petroleum Division, American Institute of Mining and Metallurgical Engineers

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

30000—**Paraffin wax**, Durango, Mexico, purchase.

30048.—**Paraffin wax**, Valparaiso, Chile, agency.

30003.—**Oils** (unspecified) Ahmedabad, India, purchase.

30069.—**Lubricating oils**, Rosario, Argentina, purchase and agency.

30155.—**Automobile greases**, Berlin, Germany, agency.

Leader Iron Works, Decatur, Ill., announces the appointment of J. G. (Jack) Fleckenstein as its Michigan representative. "Jack," as he is familiarly known to the oil trade in Michigan, will handle the Leader line of bulk plant equipment, rivet-weld tanks, truck tanks, air compressors and steel drain racks.

Wilson Welder & Metals Co., Hoboken, N. J., has off the press bulletin E, on "Good Welding Essentials" by Alexander Churchward, technical director of the company. In it is given information of value to the inexperienced welder, as well as to the experienced one, the supervisor and engineer. It gives the advantages of the short arc and the disadvantages of the long one, and tells how to determine the proper current for any particular job and how to determine a good weld.

Paragraphs are devoted to causes of bad welds and influence of length of arc on the strength of weld.

A better way to clean waste

A BETTER, more thorough way to wash your dirty waste and wiping cloths is the Oakite way. A money-saving way, too, because it leaves them soft and absorbent—like new, even after many washings.

Write for practical booklet "Oakite for Cleaning Waste". It contains formulas and suggestions that have saved hundreds of dollars for many concerns. Your copy is waiting.

Oakite Service Men, cleaning specialists, are located in the leading industrial centers of the United States and Canada.

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CONSIDER THESE
FACTS

MAKE MORE MONEY

1. You can make from $200.00 to $500.00 per month with the help of **a Gladish Electric Auto Elevator.**

SELL MORE OIL

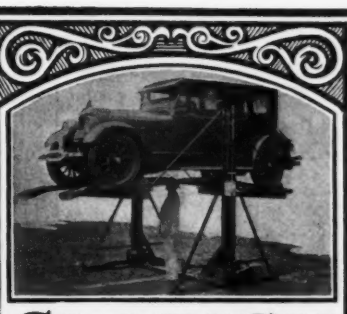
2. You can sell Six Quarts of lubricating oil where you formerly sold one.

QUICK SERVICE

3. Car owners want their cars greased thoroughly, often and quickly. The **Gladish Electric Auto Elevator** allows you to do this.

BUILDS BUSINESS

4. Ask your customers to buy complete lubrication. Ask them to let you change their oil. You can serve them better, cleaner & faster with a **Gladish Electric Auto Elevator.**



GLADISH
Electric Auto ELEVATOR

Most practical, efficient and economical lifting equipment for service stations and garages. Raises car five feet above the ground. Built on jack screw principle, the safest lifting method known. Allows complete lubrication and change of oil in 20 minutes. Greatest money-maker for hundreds of users. Write us today for complete details.

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2426 East 14th St.
Chattanooga, Tennessee

GULF Refining Company

General Sales Offices
PITTSBURGH, PA.

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New York **Boston** **Philadelphia** **Louisville**
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REFINERS OF OKLAHOMA, TEXAS AND LOUISIANA

PETROLEUM

Refined Oil **Naphtha** **Paraffine Wax**
Gasoline **Gas Oils** **Petroleum Coke**

FUEL OILS

LUBRICATING OILS

Cylinder **Engine** **Cordage**

RED AND PALE PARAFFINE OILS

TRIPLEXD
GASOLINE HOSE

ALL sizes and lengths of Triplexd Hose are carried in stock in these cities:

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MEMPHIS: 245 Monroe Ave.
JACKSONVILLE:
Dixie Culvert & Metal Co.
ATLANTA: P. O. Box 1343
RICHMOND: P. O. Box 514
BROOKLYN: 236 Tillary St.
BOSTON: 142 Berkeley St.
PITTSBURGH:
341 Second Avenue
CLEVELAND: 4336 Broadway
CINCINNATI:
450 East Pearl Street
DETROIT:
5459 Grand River Avenue
ST. LOUIS: 1621 Pine Street
KANSAS CITY:
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METAL HOSE & TUBING CO.
INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

New Equipment to Improve Plants

Personal Notes of the Manufacturers

National Petroleum News

The Granberg Meter Corp. has recently been incorporated to handle the manufacture and sale of the Granberg meter, formerly handled through the Associated Supply Co. This company was formed following the sale of Associated Supply Co. to The Youngstown Sheet & Tube Co. Walter S. Brubaker, who formerly handled the sales of the meter, is vice president and general manager of the new incorporation.

The Granberg petroleum meter is used by many of the refining and marketing companies on the west coast and it has been successfully introduced in recent months to a number of the leading marketers in the east.

* * *

Erie City Iron Works, Erie, Pa., has established a direct sales office at 122 S. Michigan Ave., Chicago, with Charles B. Acheson as district manager, J. R. LeVally as special engineer and D. F. Lytle as sales representative.

A sub-office has been established in the Chicago district at 511 Traction Terminal Bldg., Indianapolis, Ind., with E. J. Clerget in charge.

The company announced in a recent bulletin that the fourth Erie City steam unit has been installed in the "world's largest plant devoted to the exclusive manufacture of shipping cases and kindred products", which is the River Raisin Paper Co., Monroe, Mich., according to the advertisment.

* * *

Allen-Bradley Co., Milwaukee, Wis., promises ideal motor starting with its J-3052 automatic compression resistance starter, as well as easy and quick adjustment for any motor load condition. The J-3052 type provides smooth starting and gradual acceleration due to the use of graphite compression resistance.

* * *

The United States Air Compressor Co., Cleveland, O., began to deliver its new U. S. electro hy-press greases in March, which is an automatic, one-man electric greaser for high pressure lubrication of motor cars. The device will be manufactured on a quantity basis and its appearance on the market was delayed several weeks because of this fact. It has been tried and tested with months of actual commercial service.

* * *

The Linde Air Products Co., 30 E. 42nd St., New York City, in its March edition of "Oxy-Acetylene Tips" asks "Why discard old lines?" and then proceeds to tell how old oil and gas pipe lines can be reclaimed by the oxy-acetylene process at minimum cost and fitted for many more years of service.

The process consists generally of uncovering the line, burning off the old paint, cutting the pipe with oxy-acetylene blowpipes, chipping with air chisels and wire brushing the surface. Illustrations of the various processes and machinery used in this operation, are published.

* * *

Butler Mfg. Co., Kansas City, Mo., has designed a new model gasoline pump No. 85 at lower cost but with the same pumping unit as its higher priced pumps. The new pump is equipped with Kromex glass bowls for prevention of discoloration. Other features of the new model are: Provision for full lighting; sealed inside metal markers that cannot be tampered with; substantial castings and leak-proof assembly.

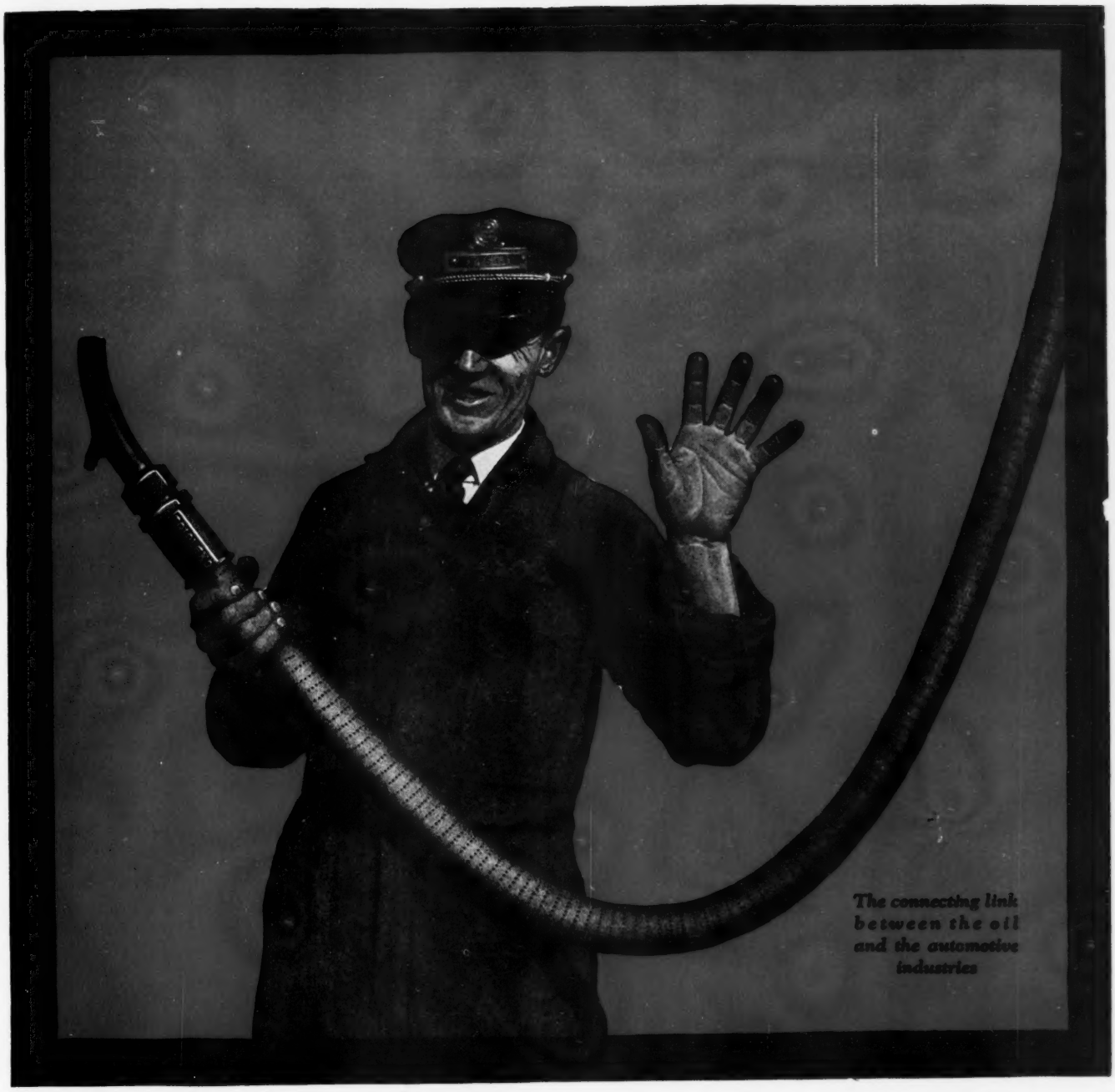
* * *

Celite Products Co., Los Angeles, in its recently published bulletin No. 336 on "Designing Concrete for Workability as Well as Strength" describes how workability in concrete can be controlled and improved by the use of Celite, a light weight powder in a very finely divided state. Proper workability, which is the basis for all beneficial qualities in concrete construction—uniformity, high effective strength, water-tightness, lower costs for handling and placing and assurance of good appearance, is said to be improved by the use of Celite, according to the company.

The cover of the bulletin shows a picture of the central office and main retail store of Sears, Roebuck & Co. in Los Angeles, on which 3 pounds of Celite per bag of cement were used in all concrete.

* * *

Cutter Electrical & Mfg. Co., Philadelphia, manufacturer of I-T-E circuit breakers and U-Re-Lites for the past 40 years, recently changed its name to the I-T-E Circuit Breaker Co. The chief reason for the change, according to Philip C. Gunion, sales manager, was that the company was constantly being confused with two other electrical manufacturers of similar name, and also that as no Mr. Cutter had been connected with the company for over 25 years, there was no reason to prevent the change.



"There's nothing like Triplexd!"

THAT remark applies to more than the mere physical construction of the hose.

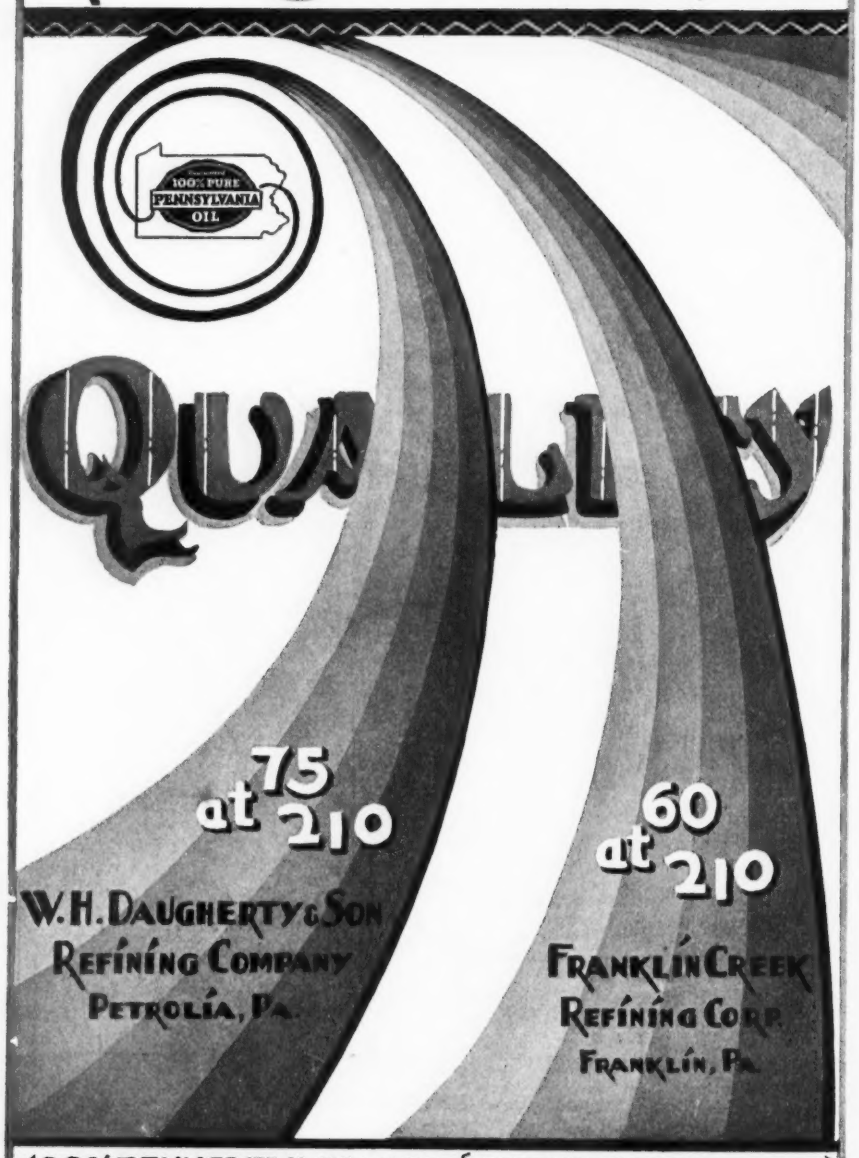
It applies particularly to the Triplexd Insurance now in force for 1000 Days on every pump you own or operate—to which Triplexd Registered Insured Gasoline Hose* is attached.

Full information on request, without cost or obligation.

METAL HOSE & TUBING CO.
INCORPORATED
236 Tillary Street
BROOKLYN, N.Y.

Triplexd Registered Insured Gasoline Hose is any length of Triplexd Filling Station Pump Hose ¾", 1", or 1¼" inside diameter, and not more than 15 feet long, shipped from our Brooklyn Factory on or after June 1, 1927

REFINING SCIENCE MODERNIZED



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SALES OFFICES 114-5th AVE., NEW YORK

Draw New Customers from Far and Near

ALLISON COUPON BOOKS

Accurate—Compact—Convenient

Motorists go out of their way to find a filling station with Allison Coupon Books. They appreciate their convenience and simplicity. And filling stations find them absolutely accurate. Furnished in stock or special designs. *Send for samples and prices.*

Allison Coupon Company

Indianapolis, Indiana

Coupon Book Specialists Since 1888

New Stations Building

Red Wing, Minn.—Consumers Gas & Oil Co., Bulk station.

Laramie, Wyo.—The Texas Co., filling station.

Lincoln, Neb.—State Oil Co., filling station.

Anaconda, Mont.—Halford & Morris, filling station.

Scottsbluff, Neb.—Earl Baker and R. R. Poland, filling station.

Charleston, Ill.—Glen T. Edman, filling station.

Rushville, Ill.—Ralph Swearingen, filling station and tourist camp.

Madison, S. D.—Jones & Albertson, filling station, which will be leased to White Eagle Oil & Refining Co.

Bottineau, N. D.—S. M. Nichol, filling station.

Bristol, Pa.—Daniel J. McLees, filling station.

Dawson, Ga.—Curry Co., filling station.

Wheeling, W. Va.—A. M. Lorentz, filling station.

Boone, Ia.—Standard Oil Co. of Indiana, filling station.

Allison, Ia.—Frank Busse, filling station.

Fennimore, Wis.—Standard Oil Co. of Indiana, filling station.

Red Wing, Minn.—The Texas Co., filling station.

Martins Ferry, O.—F. W. Boggs, filling station.

Waterloo, Ia.—B. F. Swisher, filling station.

New Philadelphia, O.—Roxana Petroleum Co., filling station.

Traer, Ia.—A. M. Ledvina and Gavrolese Franklin, filling station.

Heron Lake, Minn.—Leonard and Melvin Lokker, filling station.

Livingston, Wis.—Wendall Watson, filling station.

Hardin, Ill.—Munsterman & Son, filling station.

Middletown, O.—Palmco Oil Co., filling station.

McArthur, Okla.—C. B. Fry & Son, filling station.

Louisville, Ky.—Stoll Oil Refining Co., filling station at Bardstown Rd. and Hawthorne Ave.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has purchased the Monarch Tractors Corp., as of March 1 and business will be conducted under the name of Monarch Tractors Corp. Manfacture of Monarch six-ton and 10-ton tractors will be continued at the Springfield, Ill. plant.

Blackhawk Mfg. Co., Milwaukee, Wis., manufacturer of hydraulic jacks, steel socket wrenches and circulating water pumps, announces that a saving of nearly 50 per cent in production on a recent job of pressing in bushings with the Blackhawk hydraulic oil-power jack was accomplished at the plant of the Wisconsin Motor Mfg. Co. of Milwaukee. A spring fastened to the base of the jack and to the side of the ram pulls the head of the jack off the finished job when a release valve is opened, permitting the removal of the piece and placement of a new shaft and collar, instead of the operator having to do the pulling as in the old method.

Delays and repairs are avoided which were necessary on the mechanical press formerly used by this company.

QUALITY

TOKHEIM

Right to a "T"

Cut 610-620

Greatest value at moderate price

Buy equipment that will serve you tomorrow as well as today

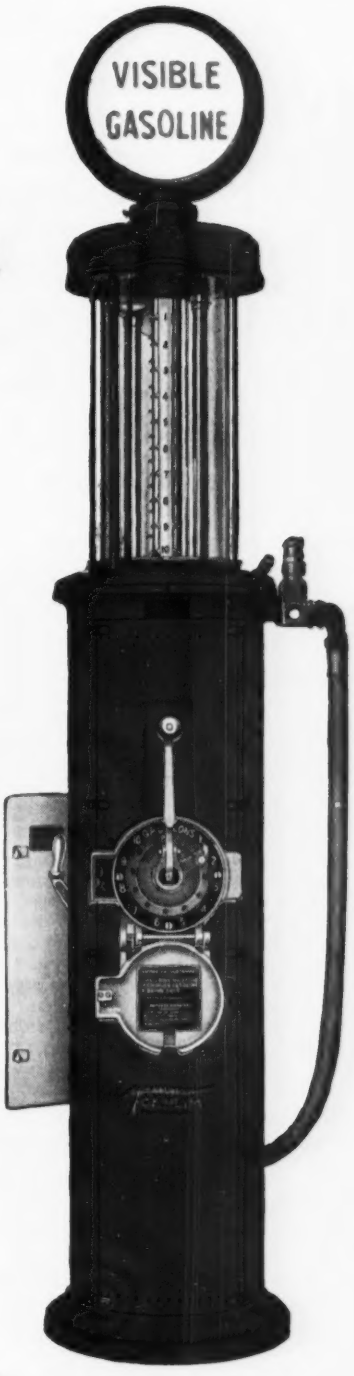
Tokheim Pumps are built to give enduring service. Tokheim has only one standard of quality... the best.

Your Tokheim equipment will give you the accurate, speedy service you need to meet today's requirements and it will continue to serve you dependably for years.

Write Department M for specifications and prices on Cut 600-605 and Cut 610-620—Tokheim's great leaders.

TOKHEIM OIL TANK & PUMP COMPANY

FORT WAYNE, INDIANA



Cut 600-605

with the famous Master Control Meter

Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to *improving your mind.*

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

HOUSE HEATING WITH OIL FUEL

by

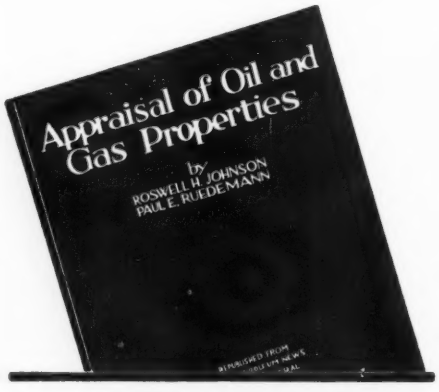
P. E. Fansler, E. E.

One of the most valuable contributions to the oil industry in this third and greatly-enlarged edition of "House Heating with Oil Fuel" is the Iso-Oil-Consumption chart. By means of this chart, it is possible to estimate closely the volume of oil fuel required in any home or building in the United States.

This book of 354 pages, profusely illustrated, meets the present widespread demand for information on the use of oil fuel for domestic heating, and covers the subject in all phases.

There are chapters devoted to practical considerations of combustion, which include flame photographs representing the flame characteristics of different types of burners; boilers designed for use with oil burners; warm-air furnaces for use with oil burners; types of oil burners; atmospheric draft burners; modern mechanical draft machines; control of oil burners; how many gallons of oil equal ton of coal; Underwriter's regulations; oil burner fires, etc.

354 pages—illustrated, Price $4



"Appraisal of Oil and Gas Properties" gives more detail as to working methods, with drawings and charts, than has ever been offered the oil industry in a work on appraisal.

The book contains 24 chapters as follows:

Kinds and Purposes of Appraisal; Definitions; Organization of Work; Calculation of Past and Present Yield; Line and Underground Loss; Estimation of Future Yield of Producing Wells—Methods and Decline Curves—Ultimate and Total Recovery—Undeveloped Areas, Proven and Unproven—Refinements; Prediction of Future Prices; Prediction of Future Operating Costs; Future Costs of Development and Improvements; Discount Factor in Annual Analytical Appraisals; Investment Risk; Computations for Appraisal of Wells; Valuation of Undeveloped Acreage—of Physical Property—of Intangibles; Computation of Depletion—of Depreciations; The General Report; Office Records; Appraisal for Fixing Rates; Appraisal of Casinghead Gasoline Production.

Only a limited number of these books has been printed. *Send for your copy today.* Price $4.

AMERICAN FUELS

by

Bacon and Hamor

"American Fuels" comes in two volumes, a total of 1245 pages and 382 illustrations.

The work aims to assist the manufacturer, engineer and chemist in deciding upon the most suitable fuel to use to get the highest efficiency in plant operation. It gives details of equipment and definite advice and information not obtainable in book form before.

Some of the main topics covered are: Availability, Chemistry, Properties, Production of fuels—Combustion engineering—Coking, Water gas, Producer gas—Fuel oil—Powdered coal—Analysis, testing—Economic use of fuels—Advantages of specific fuels—Relative costs of fuels—Fuel conservation.

Two volumes—1245 pages—$12.

Cut out and mail

National Petroleum News,
Room 707—1213 W. 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $_____

- ☐ House Heating with Oil Fuel $4
- ☐ Appraisal of Oil and Gas Properties $4
- ☐ American Fuels $12

NAME_____

Address_____

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ON THE LAZY BENCH

National Petroleum News

The father of the household had a gold-headed umbrella which he prized very highly. One rainy morning the umbrella turned up missing.

"Well, did you take my umbrella?" he asked of his son.

"No, father."

"Did you, Mary?"

"No, father, I didn't see it."

Just then the younger brother came in. "I know where it is, I think sister's beau took it."

"Why, Tommy!" said sister. "He did not!"

"Well, all I know," said Tommy, "last night, as he was leaving, I heard him say to sister in the hall, "I'm going to steal one tonight."

—*Stanolind Record.*

* * *

Time Wasted

A lad from Epps' Crossing, having ambitions to become a great banker, ran away from home and succeeded in getting a job as bank messenger. Upon his return home two weeks later one of his old friends asked him why he didn't keep his job in the city.

"I don't like being a banker," he replied. "I'm sorry I learned it."

—*The Loreco Diamond.*

* * *

A bachelor leads a lonesome life,
Deprived of the joys of home and wife.
He never knows, the poor old bum,
Where the next kiss is coming from.

—*The Atlantic Seal.*

* * *

Within the Law

Teacher (to tardy student): "Bobby, why are you late?"

Bobby: "Well, a sign down here"—

Teacher: "Well, what has a sign got to do with it?"

Bobby: "The sign said: 'School ahead, go slow'!"

—*I.O.M.A. of New England.*

* * *

Rufe—"Yo-all don't look danjurious to me, black boy. F'um whar Ah comes hit was so tuff dey weans nigger babies wif chawin' tobacker."

Abe—"Boy, yo' sho is frum a peaceful village. Down in Tenn'see whar Ah comes frum, dey picks de flowers wif claw hammahs."

—*The Loreco Diamond.*

* * *

A small boy sauntering down the street with two dogs was stopped by an officer.

"Have both those dogs got licenses?" he asked.

"The big one's all right," answered the youngster, "but the little one is full of 'em."

—*Stanolind Record.*

* * *

She—"Is my nose shiny, dear?"

He—"No, but your right knee is dusty."

—*The Loreco Diamond.*

* * *

Call a Ham Doctor

"Waiter, this ham is not good."

"It ought to be sir, it was only cured last week."

"Well, then it's had a relapse."

—*I.O.M.A. of New England.*

* * *

The Royal Road

"I hear you made your money out of the oil business," remarked Welch.

"You bet!" answered Stewart. "Been out of it all my life!"

—*I.O.M.A. of New England.*

* * *

Force of Habit

"I never knew Jones had twins."

"My dear! He married a telephone girl and, of course, she gave him the wrong number."

—*Oakite News Service.*

* * *

The Open Market

"Where do you get your motor accessories?"

"Oh," replied the sheik airly, "I just honk and smile at them and they climb into the car."

—*I.O.M.A. of New England.*

* * *

"What is a detour?"

"The roughest distance between two points."

—*Stanolind Record.*

* * *

Judge: "Have you anything to say before sentence is passed?"

Burglar: "The only thing I'm kicking about is being identified by a man that kept his head under the bed clothes all of the time. That's wrong."

—*Stanolind Record.*

* * *

"*Watt hour* you doing here?" asked the electrical department boss. "Eating *currents*," replied the helper, shamefacedly. "*Anode* you'd catch me at it." "Didn't you know you were late this morning?" "*Amperently* not." "*Fuse* going to do this every day you can go *Ohm*."

—*Stanolind Record.*

Reinforced Folio

362—A very compact folio, having three pockets. Made from the best grade smooth black cowhide. Stiffened bottom reinforced with metal studs. Case contains six 4-oz. bottles and five grease jars. Two inner cases may be carried.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

Neutrals for AUTO OILS!

Refined from genuine Kentucky crude.

PARAFFINE BASE.

Filtered through Fuller's Earth.

Wax pressed out.

Excellent for turbine and motor oil compounding.

Our fleet of 75 tank cars assures prompt service.

Assorted cars our specialty.

Whatever you want—a can or a carload—*be sure to get our prices!*

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REFINING COMPANY

Incorporated *Main Office and Refinery:* *Est. 1896*

LOUISVILLE, KY.

Cable Address: STOLOIL, LOUISVILLE

extra!

Your customers get extra satisfaction with OPALINE
REG U S PAT OFF
..the extra service Motor Oil

AUTHORIZED Opaline Dealers ask the motorist who drives up for motor oil this simple question—*"What's Your Mileage?"* The answer indicates on the Sinclair Recommendation Index which grade of Opaline Motor Oil he needs to fit the degree of wear in his engine to prevent the power from blowing by his pistons. This is the *extra* service he gets from the right grade of Opaline. The right *grade* of motor oil is just as important as the right *quality.* Authorized Opaline Dealers give *both*—they give *extra* service—and they get *extra* business! May we tell you about the sound, simple Opaline method of selling *precision* in lubrication? It pays.

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Refinery - Tank Wagon Markets

National Petroleum News

Exporters and Domestic Demand Keep Mid-Continent Gasolines Active

Staff Special

TULSA, March 24

THE Mid-Continent refinery markets during the week of March 19 to 24 inclusive has been one of the most active and the most encouraging week to refiners of any so far this year.

Export buyers have combed the field for 390 e.p. and 375 e.p. gasolines, and purchases of between four and five million gallons are reported; export buyers have placed orders for around a million gallons of kerosene; one large company has bought in excess of 100 cars of U. S. Motor for distribution to its own stations, and domestic business generally has been good at prices in most instances averaging slightly higher than those of a week ago.

Natural gasoline was the only commodity in the entire list which failed either to move up or hold its ground. Prices on all grades were not far from the lowest level for the past several years.

The Sinclair Refining Co. was the most active buyer of export gasolines.

The Atlantic Refining Co. and the Carson Petroleum Co. also were in the market at various times in the past week. The Sinclair company Saturday, March 17, raised its offer on 64-66, 375 e.p. gasolines from 6.875 cents, f.o.b. north Texas refineries, to 7 cents a gallon. The company previously had bought some goods at the 6.875 cent price, as had the other two companies mentioned above.

Buying continued most of the week at the 7-cent price level. Before the end of the week, however, virtually every refiner in the north Texas area had booked enough export business to keep him busy for the next two to four weeks, and the buying shifted to other areas of the Mid-Continent.

It is doubtful if any refiner in the field who was known to be in a position to make either 64-66, 390 e.p. or 64-66, 375 e.p. gasolines was overlooked by the buyers. In Oklahoma approximately 1,500,000 gallons of high gravity gasolines were reported bought, several refiners said they had had the inquiries from three or four sources, but were unable to book any orders.

The representative of one of the larger refineries said he had had inquiries and would have accepted some of the business but that he had sold a quantity of export gasoline March 1 which he had expected to have shipped during the month, but that now the indications were he would be unable to get the entire lot moved before April 15.

The buyer for one export company was quoted as having told refiners he talked with that his company would pay 7 cents, north Texas, or 6.9 cents, Group 3, and the seller could "write his own ticket for the amount and the period of shipment".

THE representative of another export company late in the week was quoted as saying that he was somewhat doubtful of the total amount of gasolines bought, primarily because he did not think the goods were obtainable, especially in north Texas.

Domestic business meanwhile showed a pick up in all fields. Two weeks ago the western part of Kansas was covered with snow, and the roads were almost impassable in many places. Since March 18 the weather has been unusually mild in the middle west, however, and the roads have dried out rapidly. Gasoline consumption has increased materially. Kansas refiners have been moving gasolines in large quantities, they reported, and prices have advanced .125 to .25 cents a gallon during the week.

Virtually the same situation with reference to shipments holds true for Oklahoma. Orders for the lower gravity gasolines have been slowly increasing as the season for them draws nearer, while the higher gravity goods still have been in sufficient demand from exporters and the domestic trade combined to keep shipments even with if not actually ahead of production. Prices on the lower gravities have advanced fractionally while the higher gravities have remained generally unchanged. Several refiners during the week advanced their quotations on 58-60 U. S. Motor from 6.25 cents a gallon to 6.375 and 6.50 cents a gallon.

Arkansas and Louisiana refiners have been selling their 58-60 U. S. Motor for 6.50 cents a gallon, but a majority of them on Saturday, March 24, announced that their quotations had been advanced to 6.75 cents. The market in that area was characterized as strong by many sellers.

With the export buying in north Texas, a majority of refiners have changed their cuts from the lower gravities to the export specifications, which has curtailed production of U. S. Motor. The domestic purchase of more than 100 cars, mentioned above, naturally will have the tendency to take up all the slack. An export buyer was in the field also seeking to buy U. S. Motor at 6.125 cents a gallon but as far as could be learned had been unable to find anyone willing to sell at that price. His lack of success apparently is indicative of the scarcity of U. S. Motor in north Texas at the present time.

Natural gasoline prices at the close of the week averaged from .125 to .50 cent under the prices in effect March 17. With grade C at 3.25 to 3.50 cents, the average is the lowest this year. Grade AA sold Saturday at 4.25 to 4.50 cents a gallon while grade BB moved at 3.50 to 3.625 cents a gallon. No large orders were reported placed either for prompt or over the month shipment. Manufacturers had been hoping that a pickup in buying would develop around March 15 but very little if any increase was noted. No new inquiries were reported coming in for April shipment.

EXPORT buying in Texas was responsible for an increase in prices in that territory. Refiners at the close of the week were getting 4.25 to 4.375 cents a gallon. The export purchasers were at 4.125 cents for prime white, and 4.25 cents for water white grades.

Domestic demand for kerosenes has been good throughout the week in Oklahoma. Two or three refiners who had been quoting 4.25

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Mar. 26	Prices Mar. 19	Prices Mar. 12
52-54 Naphtha	7.625– 8.25	7.50 – 8.50	7.625– 8.50
54-56 Naphtha	7.75 – 8.50	7.75 – 8.50	7.75 – 8.50
58-60 U.S. Motor 437 e.p.	8.00 – 8.50	8.00 – 8.25	8.00 – 8.25
60-62 400-410 e.p. gasoline	8.75 – 9.50	8.75 – 9.25	9.00 – 9.50
64-66 390 e.p. gasoline	9.50 –10.00	9.00 – 9.50	9.25 – 9.75
68-70 Str.-run gas. 350-360 e.p.	10.25 –11.25	9.75 –10.75	10.25 –10.875
OKLAHOMA			
48-50 450 e.p. naphtha	†5.875– 6.00	†5.75	†5.75
50-52 450 e.p. naphtha	†5.875– 6.00	†5.75	†5.75
56-58 450 e.p. gasoline	**6.00	**5.875– 6.00	**5.875– 6.00
58-60 450 e.p. gasoline	**6.00 – 6.125	**6.00	**6.00
64-66 390 e.p. gasoline	6.75	6.625– 6.75	6.50 – 6.75
68-70 350-360 e.p. gasoline	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
OKLAHOMA (Weighted Average Prices)			
58-60 U. S. Motor, 437 e.p.	6.4039	6.3643	6.2552
60-62 437 e.p. gasoline	6.7357	6.7293	6.6413
60-62 400 e.p. gasoline	6.7391	6.7625	6.6525
64-66 375 e.p. gasoline	7.2500	7.0750	7.2500

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 37 of this issue. The two previous week's prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS* (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	6.75	6.50 – 6.625	6.375– 6.50
60-62 400 e.p. gasoline	6.875– 7.00	6.75 – 6.875	6.75
64-66 375 e.p. gasoline	7.375	7.375	7.375
NORTH TEXAS			
48-52 450 e.p. naphtha	†5.75 – 5.875	†5.75	†5.75
56-58 450 e.p. gasoline	†5.875	†5.75 – 5.875	†5.75 – 5.875
58-60 450 e.p. gasoline	†6.00	†5.875	†5.875
58-60 U.S. Motor 437 e.p.	†6.25 – 6.375	†6.00 – 6.25	†6.00 – 6.25
60-62 400 e.p. gasoline	6.375– 6.50	6.25 – 6.375	6.25 – 6.375
64-66 390 e.p. gasoline	6.75	6.50 – 6.625	6.50
64-66 375 e.p. gasoline	7.00 – 7.125	6.75 – 6.875	6.75 – 6.875
68-70 350-360 e.p. gasoline	7.125– 7.25	7.125– 7.25	7.125– 7.25
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	6.625– 6.75	6.50	6.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	6.25 – 6.50	6.25	6.25
58-60 450 e.p. gasoline	6.25 – 6.50	6.25	6.25
58-60 U.S. Motor 437 e.p.	6.75	6.50	6.50
CALIFORNIA			
*54-58 U.S. Motor 437 e.p.	7.50 – 8.50	7.00 – 8.50	7.00 – 8.50
*58-60 U.S. Motor 437 e.p.	8.50 –10.00	8.25 –10.00	8.25 –10.00
*42-45 Eng. dis. 445-480 e.p.	6.50 – 7.00	6.50 – 7.00	6.50 – 7.00

*2c tax to be added if used in state.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Since Oct. 1, 1927 naturals must pass corrosion test.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	4.25	**4.625– 4.75	†4.875– 5.00
Grade A, 72-79.9, 90% Recovery	**4.50	**4.875– 5.00	†5.00 – 5.25
Grade BB, 84-92, 85% Recovery	**3.50	**3.875– 4.00	†4.00 – 4.25
Grade B, 76-83.9, 85% Recovery	**3.75 – 4.00	**3.875– 4.00	†4.00 – 4.25
Grade C, 80-90, 78% Recovery	**3.25	**3.625	†3.75 – 3.875
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	4.25 – 4.50	**4.875– 5.00	†5.00 – 5.125
Grade A, 72-79.9, 90% Recovery	4.25 – 4.50	**4.875– 5.00	†5.00 – 5.125
Grade BB, 84-92, 85% Recovery	**3.50 – 3.625	**4.00	†4.125
Grade B, 76-83.9, 85% Recovery	**3.50 – 3.625	**4.00	†4.125
Grade C, 80-90, 78% Recovery	**3.25 – 3.375	**3.625– 3.75	†3.875
NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†4.75	†5.50	†5.50
Grade BB	†3.875– 4.00	†4.50	†4.50
Grade C	3.75	†4.375– 4.50	†4.375– 4.50
CALIFORNIA			
75-85, 375-390 e.p. blend	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50

MOTOR FUEL BLENDS

PENNSYLVANIA			
68-70 Blend 437 e.p.	Prices	.....	.....
64-66 Blend 437 e.p.	temporarily	.....	.....
60-62 Blend 437 e.p.	discontinued	.....	.....
OKLAHOMA			
64-66 Blend 437 e.p.	†5.875– 6.25	†5.875– 6.25	†5.75 – 6.00

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.125– 6.375	6.125– 6.50	6.125– 6.375
46 w.w. kerosene	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
47 w.w. kerosene	7.00	6.75 – 7.25	6.75 – 7.00
300 mineral seal	7.25 – 7.50	7.25 – 7.50	7.25
OKLAHOMA			
41-43 w.w. kerosene	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50
42-44 w.w. kerosene	4.75 – 4.875	4.75	4.75
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
42 44 w.w. kerosene	5.50 – 5.625	5.50 – 5.625	5.50 – 5.625
NORTH TEXAS			
40-42 w.w. kerosene	†4.125	†4.125– 4.25	†4.125– 4.25
41-43 w.w. kerosene	†4.25 – 4.375	†4.375	†4.375
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	4.75 – 5.00	4.75	4.75
ARKANSAS (Arkansas destination only)			
42-44 kerosene	5.00	4.75 – 5.00	4.75 – 5.00
CALIFORNIA			
38-40 w.w. kerosene	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50

NEUTRAL OIL

Vis.	Color			
PENNSYLVANIA		(Viscosity at 70°F.)		
200	No. 3 Assoc. Filt.	33.00 –33.50	33.00 –34.00	33.00 –34.00
180	No. 3 Assoc. Filt.	30.00 –31.25	30.00 –32.00	30.00 –32.00
150	No. 3 Assoc. Filt.	26.50 –27.50	27.00 –28.00	27.00 –28.00
		(Non Viscous)		
34 Grav. 330-340 Flash		7.00 – 8.00	7.25 – 8.00	7.50 – 8.00
36 Min. Neut. 300-305 Flash		6.00 – 7.50	6.50 – 7.50	6.50 – 7.50
OKLAHOMA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150	No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150	No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180	No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180	No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180	No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200	No. 3	9.50 –11.00	9.50 –11.00	9.50 –11.00
200	No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200	No. 5	8.50 –10.50	8.50 –10.50	8.50 –10.50
220	No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220	No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220	No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240	No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240	No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240	No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280	No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280	No. 4	15.25	15.25	15.25
280	No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300	No. 5-6	17.00	17.00	17.00
GULF COASTAL				
Vis.	Color	(Viscosity at 100°F., pour test 0)		
100	No. 2 Unfilt. Pale	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
200	No. 3 Unfilt. Pale	9.50 –10.25	9.50 –10.25	9.50 –10.25
300	No. 3 Unfilt. Pale	10.50 –11.25	10.50 –11.25	10.50 –11.25
500	No. 3½ Unfilt. Pale	12.50 –13.25	12.50 –13.25	12.50 –13.25
750	No. 4 Unfilt. Pale	14.50 –15.50	14.50 –15.50	14.50 –15.50
200	No. 5½ Red Oil	7.50 – 8.25	7.50 – 8.25	7.50 – 8.25
300	No. 5½ Red Oil	8.75 – 9.25	8.75 – 9.25	8.75 – 9.25
500	No. 6 Red Oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750	No. 6 Red Oil	12.75 –13.50	12.75 –13.50	12.75 –13.50
CALIFORNIA				
Vis.	Color	(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300	No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450	No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550	No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600	No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200	No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300	No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400	No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500	No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600	No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700	No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

OKLAHOMA			
190-200 Vis. at 210° Brt. St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis. at 210° Brt. St.	21.00 –24.00	21.00 –24.00	21.00 –24.00
600 E St. 140-150 Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.50 –10.00	8.50 –10.00	8.50 –10.00
600 St. Ref. Dark Green	6.50 – 8.00	6.50 – 8.00	6.50 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA		(1-inch Immersion Test)	
600 Steam Refined	9.00 –10.25	9.00 –10.50	9.00 –10.75
650 Steam Refined	10.50 –12.50	11.00 –12.50	11.00 –12.50
600 Flash	15.00 –16.00	15.00 –16.50	16.00 –16.50
625 Flash	24.00 –27.50	25.50 –27.50	25.50 –27.50
600 Warren E	15.50 –17.00	15.50 –16.00	15.50 –16.50
600 Oil City E	15.00 –15.50	15.00 –15.50	15.00 –15.50
600 D Filtered	22.00 –23.00	22.00 –23.00	22.50 –23.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210°, 540-550 flash, No. 8 color	26.50 –28.00	27.00 –28.00	26.50 –28.00
40-50 p.p., 140-150 vis. at 210, 540-550 flash, No. 6-6½ color diluted	24.50 –25.50	24.50 –25.50	24.50 –26.50

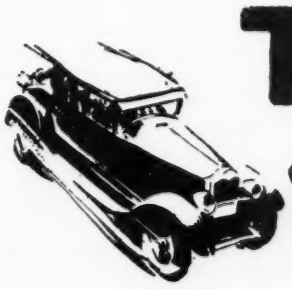
(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†PRICES NOMINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

Down to 525 feet below the water's surface went a Kiel (Germany) inventor in January, 1925. At that depth his protection could not—and did not—fail.
SKELLY
QUALITY HAS NO SUBSTITUTE

Protection That Must Not Fail

A deep sea diver doesn't care to take chances that his protection will fail him—and neither do your customers. They buy protection for their engines when they buy TAGOLENE Motor Oil. You can sell it with confidence that it will "stand up" under punishing conditions, for it's made *extra good* to give a generous margin of safety. Write, wire or phone Skelly Oil Company, El Dorado, Kans., Tulsa, Omaha, Minneapolis.



TAGOLENE
MOTOR OIL
MADE TO STAND ABUSE

MADE by the REFINERS of SKELLY *REFRACTIONATED* GASOLINE

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Mar. 26	Prices Mar. 19	Prices Mar. 12
Per Pound, New York			
122-124 white crude scale	3.125– 3.375	3.25 – 3.50	3.125– 3.25
124-126 white crude scale	3.25 – 3.375	3.25 – 3.50	3.25 – 3.375
**OKLAHOMA			
124-126 White Crude Scale	3.25	*3.00 – 3.25	3.00 – 3.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.875– 5.25	4.75 – 5.25	4.875– 5.25
30-34 fuel oil	4.75 – 5.00	4.75 – 5.25	5.00 – 5.25
28-32 fuel oil	4.75 – 5.00	4.75 – 5.25	4.75 – 5.25
OKLAHOMA			
38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
36-38 straw distillate	3.00	3.00	3.00
32-36 gas oil, straw	†2.625	†2.50 – 2.625	†2.50 – 2.625
32-36 dark gas oil	2.50 – 2.625	2.50	2.50
28-30 fuel oil (in bbls.)	$0.95 – 1.00	$0.95 – 1.00	$0.95 – 1.00
26-28 fuel oil (in bbls.)	$0.90 – 0.925	$0.90 – 0.925	$0.90 – 0.925
24-26 fuel oil (in bbls.)	**$0.85– 0.90	**$0.85– 0.875	**$0.85– 0.875
22-26 fuel oil (in bbls.)	**$0.80– 0.825	**$0.80– 0.825	**$0.80– 0.825
18-22 fuel oil (in bbls.)	**$0.80	**$0.80	**$0.80
16-18 fuel oil (in bbls.)	**$0.775– 0.80	**$0.775	**$0.775
14-16 fuel oil (in bbls.)	**$0.775– 0.80	**$0.775	**$0.775

Note: Zero cold test low flash gas oils sell for ¼ cent more per gallon. Zero cold test fuel oils sell for 5 to 15 cents more per bbl.

KANSAS *(F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50	3.50	3.50
36-38 straw distillate	3.25	3.25	3.25
32-36 gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
24-26 fuel oil	*$0.90– 1.00	*$0.90– 1.00	*$0.90– 1.00
18-22 fuel oil	*$0.85	*$0.85	*$0.85
NORTH TEXAS			
38-40 straw distillate	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil, cracked	2.375	2.375	2.375
32-36 gas oil, uncracked	2.375	2.375	2.375
24-26 fuel oil (in bbls.)	$0.75 – 0.80	$0.75 – 0.80	$0.775– 0.80

GULF COASTAL	Prices Mar. 26	Prices Mar. 19	Prices Mar. 12
Fuel (in bbls.)	$1.40 –$1.50	$1.40 –$1.50	$1.40 –$1.50
Gas oil	4.375– 4.50	4.375– 4.50	4.375– 4.50
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.75	2.75	3.00
32-36 gas oil, straw	3.00	3.00	3.125
16-20 fuel oil (in bbls.)	$0.90 –$0.95	$0.95 –$1.00	$1.00
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.25 – 3.50
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	3.00
28-32 gas oil	2.50 – 2.75	2.50 – 2.75	2.75
Road Oil	$1.15	.....	.....
CALIFORNIA* (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.75	$0.65 –$1.00	$0.65 –$0.75
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars, ½c to ¾c per pound less.)

Snow White	7.75 – 8.375	7.75 – 8.375	8.375
Lily White	6.75 – 7.375	6.75 – 7.375	7.375
Cream White	5.75 – 6.375	5.75 – 6.375	6.375
Blonde	4.50	4.50	.....
Light Amber	3.25 – 3.625	3.25 – 3.625	3.50
Amber	3.00 – 3.375	3.00 – 3.375	3.25
Red	2.75 – 3.125	2.75 – 3.125	2.75
Green No. 5 color	2.50	2.50	2.25

**PETROLEUM COKE

OKLAHOMA

(Per ton in car lots)

Lump	$5	$5	$5
Still run	$3	$3	$3
Breeze	$2	$2	$2

MINAL ††ONLY ONE REFINER QUOTING *QUOTATIONS ONLY **REPRESENTS BOTH SALES AND QUOTATIONS

cents for 41-43 w.w. grade advanced prices to 4.375 cents. Others continued to quote 4.50 cents. Resale buyers reported some difficulty in obtaining any goods under 4.25 cents.

A majority of refiners making 42-44 w.w. grade were selling at 4.875 cents. A sufficient volume of goods continued to move from two sources, however, at 6.75 cents to be a factor in the market.

Industrial users of gas oil have been active in Oklahoma and prices were reported more firmly entrenched at present levels. The 32-36 dark gas oil has been moving mostly at 2.50 cents, but a few sales were reported late in the week at 2.625 cents. Buyers report refiners were unwilling to sell at less than 2.50 cents a gallon, and many of them said they had rather hold their gas oil for cracking when the summer demand for gasoline arrives.

Fuel oils continued to move well at prices in effect a week ago. Advances in prices were noted on the low gravities in two or three spots. Sales of 14-16 and 16-18 gravity goods were made during the week at 80 cents. One or two refiners also advanced quotations slightly on other grades, but sales were not in sufficient volume to cause a general price change upward.

Movement of fuel oils was somewhat slower in Texas, but large rail and industrial users in that area already had sent inquiries into the market for April shipment, and if these purchases are in line with those of previous months, refiners are of the opinion no change downward will be made in prices.

Neutral oils and cylinder stocks have been moving exceptionally well at unchanged prices. One large refiner said his storage of bright stocks was 50 per cent lower at the present time than a year ago. Others report their orders have increased in volume from all sources. One refiner said his company was having an exceptionally good demand at present for compounded motor oils. This business within the past few days, he said, had more than doubled.

Wax prices were virtually nominal. A majority of refiners were well sold up and several already had booked orders for April. Prices quoted were around 3.25 cents a pound for April shipment.

Contracts are being made by a few refiners for road oil this season. One large refiner in Oklahoma already has made one large contract at $1.10 a barrel. Arkansas refiners are asking from $1.05 to $1.15 a barrel, depending on the destination. If the mild weather continues, it was pointed out, road oil shipments will be considerably in advance of last year's first orders.

Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of New Jersey—T.w. and s.s. prices gasoline advanced ½ cent, Virginia, covering ½ cent increase in road tax bringing total tax to 5 cents, **March 19.**

Atlantic Refining—T.w. and s.s. prices gasoline advanced 1 cent, Philadelphia, to 16 cents and 19 cents respectively, excluding the 3 cent state tax, **March 20.** This brings prices at Philadelphia in line with the rest of the state. Prices there had been below rest of the state since **March 13, 1927.**

Standard of Kentucky—S.s. price only of gasoline reduced 2 cents, Savannah, to 17 cents, **March 16.** T.w. unchanged at 17 cents. T.w. and s.s. prices cut 1 cent, Mobile, to 17 cents and 20 cents respectively, including 4 cent state tax, **March 16.**

Magnolia Petroleum—S.s. price gasoline advanced 1 cent, Texarkana, to 20 cents, **March 2.**

T.w. and s.s. prices gasoline advanced 1 cent, El Paso, to 16 cents and 19 cents respectively, including 3 cent state tax, **March 22.**

T.w. price gasoline reduced 1 cent, s.s. advanced 1 cent, Fort

(*Continued on page* 114)

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

(As posted by principal marketing companies)

(OIL PRICE HANDBOOK has t.w. and s.s. markets for whole year arranged for quick reference)

These Prices In Effect March 26, 1928

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	16	2	18	20	14
Newark, N. J.	16	2	18	20	14
Annapolis, Md.	16	4	20	23	12
Baltimore, Md.	16	4	20	23	10
Cumberland, Md.	16	4	20	23	14
Washington, D. C.	16	2	18	21	12
Danville, Va.	16	5	21	*	14
Norfolk, Va.	16	5	21	24	12
Richmond, Va.	14	5	19	22	14
Roanoke, Va.	16	5	21	24	14
Petersburg, Va.	16	5	21	24	14
Charleston, W. Va.	16	4	20	23	14
Keyser, W. Va.	16	4	20	23	14
Parkersburg, W. Va.	14	4	18	21	14
Wheeling, W. Va.	16	4	20	23	14
Charlotte, N. C.	16	4	20	23	14
Hickory, N. C.	16	4	20	20	14
Mt. Airy, N. C.	16	4	20	20	14
Salisbury, N. C.	16	4	20	23	14
Charleston, S. C.	15	5	20	23	14
Columbia, S. C.	15	5	20	23	14

*Dealers set own prices. S. O. New Jersey does not operate station.

Note: Above gasoline and oil prices in N. Carolina include ¼c per gal. inspection fee and in S. Carolina ½c.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	17	0	17	*19	15
Albany, N. Y.	17	0	17	19	15
Buffalo, N. Y.	15	0	15	18	14
†Rochester, N. Y.	15	0	15	18	12
Syracuse, N. Y.	17	0	17	17	15
Boston, Mass.	17	0	17	18	15
Augusta, Me.	17	4	21	23	15
Manchester, N. H.	17	4	21	22	15
Burlington, Vt.	17	3	20	22	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

†It is reported that S. O. New York is selling a second grade of gasoline at Rochester, 3c below the above posted prices which apply on its Socony grade.

ATLANTIC REFINING

Pittsburgh, Pa.	16	*	16	*22	13
Philadelphia, Pa.	16	*	16	*22	13
Allentown, Pa.	16	*	16	*22	13
Erie, Pa.	12	*	12	*18	13
Scranton, Pa.	16	*	16	*22	13
Altoona, Pa.	16	*	16	*22	13
Dover, Del.	16	3	19	22	13
Wilmington, Del.	16	3	19	22	12
Providence, R. I.	18	2	20	20	15
Boston, Mass.	18	0	18	18	15
Springfield, Mass.	18	0	18	18	15
Worcester, Mass.	18	0	18	18	15
Hartford, Conn.	18	2	20	20	14
New Haven, Conn.	18	2	20	20	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Lexington, Ky.	13	5	18	21	15.5
Louisville, Ky.	13	5	18	21	15
Covington, Ky.	14	5	19	22	15.5
Clarksdale, Miss.	12	4	16	16	11.5
Gulfport, Miss.	††14.5	4	††18.5	21.5	14
Jackson, Miss.	13	4	17	20	12
Natchez, Miss.	12.5	4	16.5	19.5	14
Vicksburg, Miss.	12.5	4	16.5	19.5	14
Birmingham, Ala.‡	13	4	17	18	14
Mobile, Ala.‡	13	4	17	20	14
Montgomery, Ala.*‡	9	4	13	16	15.5
Atlanta, Ga.	13	4	17	18	†15
Augusta, Ga.	13	4	17	18	†16.5
Macon, Ga.	11	4	15	16	†16.5
Savannah, Ga.	13	4	17	17	†14.5
Jacksonville, Fla.°	10	5	15	16	13.5
Miami, Fla.°	14	5	19	20	14.5
Tampa, Fla.°	11	5	16	16	13
Pensacola, Fla.°	**14	5	**19	22	13

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

‡Alabama gasoline prices include 1/40 of 1c inspection fee. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

°Florida gasoline prices include ⅛c inspection fee.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	14	0	14	16	12
Decatur, Ill.	14.2	0	14.2	16.2	12.1
E. St. Louis, Ill.	13.1	0	13.1	15.35	11.2
Joliet, Ill.	14.4	0	14.4	16.4	12.3
Peoria, Ill.	14.2	0	14.2	16.2	12.1
Quincy, Ill.	14.2	0	14.2	16.2	11.9
Indianapolis, Ind.	14.2	3	17.2	19.2	13.2
Evansville, Ind.	14	3	17	19	13
South Bend, Ind.	14.4	3	17.4	19.4	13.4
Detroit, Mich.	14.8	3	17.8	19.8	13.7
Grand Rapids, Mich.	14.7	3	17.7	19.7	13.6
Saginaw, Mich.	14.9	3	17.9	19.9	13.8
Green Bay, Wis.	14.6	2	16.6	18.6	12.4
Madison, Wis.	14.3	2	16.3	18.3	12.1
Milwaukee, Wis.	14.1	2	16.1	18.1	11.9
La Crosse, Wis.	15.2	2	17.2	19.2	13
Minneapolis, Minn.	14	2	16	18	12.9
Duluth, Minn.	13.5	2	15.5	17.5	12.9
Mankato, Minn.	12.1	2	14.1	16.1	12.7
Des Moines, Ia.	12.9	3	15.9	17.9	12.3
Davenport, Ia.	14.5	3	17.5	19.5	12.3
Sioux City, Ia.	14.1	3	17.1	19.1	11.9
Mason City, Ia.	14.5	3	17.5	19.5	12.3
St. Louis, Mo.	*13.6	2	15.6	17.9	11.3
Kansas City, Mo.	†12.9	2	14.9	16.9	10.6
St. Joseph, Mo.	†12.5	2	14.5	16.5	11.2
Fargo, N. D.	16.9	2	18.9	20.9	14.9
Grand Forks, N. D.	17.2	2	19.2	21.2	15.2
Minot, N. D.	16.9	2	18.9	20.9	14.9
Pierre, S. D.	15.5	4	19.5	21.5	13.9
Huron, S. D.	15.5	4	19.5	21.5	13.9
Wichita, Kans.	12.8	2	14.8	16.8	10.8
Bartlesville, Okla.	12.5	3	15.5	17.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline outside the city of Chicago is 1c for 50 gals. or more at one delivery; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

In Chicago, above discounts apply, except that minimum required quantity to get the 1c discount is 100 gals., instead of 50 gals. This 1c discount applies on quantities of 100 gals. and over, in addition to regular Q.D.A. discounts applying thru rest of territory, as stated above.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month, or 2400 gals. per year.

Discount on kerosene is 1c on 50 gal. dumps throughout territory.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	17.25	12.25
McCook	12.75	2	14.75	16.75	11.50
Norfolk	14.75	2	16.75	18.75	12.75
North Platte	15.75	2	17.75	18.5	13.50
Scottsbluff	15.25	2	17.25	19.25	13.00

CONTINENTAL OIL

Denver, Colo.	14	3	17	19	14.5
Pueblo, Colo.	14	3	17	19	14.5
Grand Junction, Colo.	17.5	3	20.5	22.5	18
Casper, Wyo.	14	3	17	19	13
Cheyenne, Wyo.	15	3	18	20	14.5
Butte, Mont.	19.5	3	22.5	22.5	19
Helena, Mont.	19.5	3	22.5	24.5	19
Salt Lake City, Utah	16.5	3½	20	22	17
Boise, Ida.	19.5	4	23.5	25.5	19
Twin Falls, Ida.	19.5	4	23.5	25.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA*

Phoenix, Ariz.	19	4	23	27	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

*On Oct. 1, t.w. price at all points for spot sales, was advanced 1c. Very large portion of deliveries are under contract carrying above prices. New customers signing contracts and selling only one brand of gasoline, are given prices published in above table.

S. O. LOUISIANA

Little Rock, Ark.	15	5	20	21	11
Alexandria, La.	13	2	15	18	†14
Baton Rouge, La.	12	2	14	17	†12.5
Lake Charles, La.	13.5	2	15.5	18.5	†14
New Orleans, La.	13.5	2	*15.5	*18.5	†14
Shreveport, La.	13.5	2	15.5	18.5	†13
Lafayette, La.	13	2	15	18	†13.5
Bristol, Tenn.	16	3	19	22	14
Chattanooga, Tenn.	16.5	3	19.5	22.5	15
Knoxville, Tenn.	16.5	3	19.5	22.5	15
Nashville, Tenn.	15	3	18	21	15
Memphis, Tenn.	14	3	17	18.5	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	14	3	17	19	14

MAGNOLIA PETROLEUM

Muskogee, Okla.	13	3	16	17	11
Oklahoma City	12	3	15	16	11
Tulsa, Okla.	12	3	15	16	11
Fort Smith, Ark.*	13	*3	16	19	12
Little Rock, Ark.	15	5	20	21	12
Texarkana, Ark.*	13	*3	16	20	12
Dallas, Tex.	10	3	13	17	11
Fort Worth, Tex.	11	3	14	17	11
Houston, Tex.	10	3	13	17	15
San Antonia, Tex.	11	3	14	17	10
El Paso, Tex.	13	3	16	19	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		19	....

Note: Above prices on Oleum Spirits and V. M. & P. Naphthas went into effect Jan. 3, 1928.

*Includes 2c state tax.

†Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	19.5	3	22.5	26	21
Ottawa	19.5	3	22.5	26	21
Cochrane	24.5	3	27.5	36	26
Ft. William	22.5	3	25.5	29	22.5

MANITOBA

Winnipeg	21.5	3	24.5	28	21.5

SASKATCHEWAN

Regina	25.5	0	25.5	30	25.5

ALBERTA

Edmonton	26.5	3	29.5	33	26.5
Calgary	22.5	3	25.5	29	22.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	20.5	3	23.5	27	21
Quebec City	22.5	3	25.5	31	23
Three Rivers	22.5	3	25.5	29	23

NEW BRUNSWICK

St. John	22.5	3	25.5	30	22
Moncton	22.5	3	25.5	30	22

NOVA SCOTIA

Halifax	22.5	5	27.5	32	24
Sydney	22.5	5	27.5	32	24

PRINCE EDWARD ISLAND

Charlottetown	22.5	3	25.5	29	22

Note: In districts surrounding these points 1c additional is added to city price.

Retail Price Advances Stiffen Tank Car Market in East

Staff Special
NEW YORK, March 24

SPOT demand from the jobbing trade for U. S. Motor gasoline continued relatively quiet in Atlantic seaboard markets the past week. Prices were generally steady and contract shipments exceptionally good, according to current reports from most sellers.

Continued improvement was noted in retail markets. Atlantic Refining Co. March 20 advanced tank wagon at Philadelphia 1 cent to 16 cents, leaving Erie, Pa., the only city with prices below normal in relation to other points in its territory. Philadelphia, together with Boston, has been looked upon as one of the worst price cutting centers in the east and the return to normal was greeted heartily by the trade.

A few refiners were willing to cover jobbers on their April gasoline requirements at present market levels, it developed this week. At least one refiner in the Philadelphia market and one seller in the New York harbor market definitely asserted themselves on the policy of taking on April business at 8.75 cents. Toward the end of the week, the move had grown to the point where it was felt the jobbing trade in the east would be pretty well covered for April at this price.

Offsetting this, however, was a tightening up of the California gasoline situation. Prices on the west coast moved up approximately 0.25 cent this week and eastern buyers reported it difficult to get quotations at any price. Several purchases were made last week at 6.125 and 6.25 cents.

The tank car market for U. S. Motor gasoline in New York harbor advanced 0.25 cent early in the week to 8.75 cents flat. This price prevailed for the bulk of spot business transacted from March 19 on. Resale agents who still had some 7.75-cent and 8-cent goods to take out before the end of the month made occasional offers at less than the price maintained by all major refiners for new business. The total volume of gasoline involved, however, was said to be negligible in comparison to the volume moving at higher prices.

The sale of a bulk quantity of U. S. Motor gasoline, approximately 30,000 barrels, at 7.25 cents f.o.b. New York harbor was disclosed late this week. That the goods was high in sulfur content was the explanation given for the exceptionally low price.

With the advance to 8.75 cents on March 19 made by the one refiner who had been holding back at 8.50 cents, the U. S. Motor market at Philadelphia became uniform at the former price. California U. S. Motor gasoline was offered for immediate shipment at the same price.

A refiner in the Baltimore district who continued quoting 8.50 cents for spot U. S. Motor early in the week later withdrew from the market entirely. In some quarters it was reported other sellers in the Baltimore market had purchased the output of this refiner for the balance of March at 8.50 cents, while some factors stated the refinery has been shut down temporarily. Toward the end of the week, sellers reported jobbers ordering out 8.75-cent shipments with little hesitancy. California gasoline for shipment north and west from the Baltimore district was quoted at 9 cents; for shipment to Washington and Virginia, 9.25 cents and for Baltimore delivery, 9.50 cents.

U. S. Motor prices at Norfolk, Wilmington, Charleston, Savannah and Jacksonville all were advanced 0.25 cent to 8.75 cents, 8.75 cents, 8.50 cents, and 8 cents, respectively. One or two sellers with terminals at Savannah and Jacksonville were quoting 8.25 cents.

Spot demand for gasoline showed considerable improvement in New England markets. Price advances in the Boston and Providence districts were made about three weeks before advancing markets got under way at points south, and sellers in these markets reported low priced goods sold for deferred shipment were about out of the way. Quotations for U. S. Motor in these two districts were unchanged at 9 to 9.25 cents, f.o.b. shipping point.

The seasonal falling off in demand for kerosene continued this week but prices for the most part were steady. Water white goods was available at 6.50 cents in the Philadelphia market, however, against a minimum of 6.75 cents a week ago.

Spot demand for heavier burning oils also was slow, but refiners in several districts reported they were busy making contracts for next season. A number of gas oil contracts were closed this week by New England refiners at 5 cents a gallon, and furnace oil contracts were being negotiated on the basis of 6 cents over the season. An inquiry for 500,000 gallons of gas oil over six months beginning Sept. 1 also was in the market.

Grade C bunker oil was steady at $1.35 a barrel in New York harbor

Gasoline Prices Rise Steadily In Export Market

Staff Special
NEW YORK, March 24

GULF export markets continued at the pace set last week and three cargoes of gasoline for foreign shipment were closed. Aside from the fresh buying for export reported this week, there were continued attempts on the part of brokers to cover on business contracted for early this month. Domestic buyers also were active in the Gulf market with inquiries for three cargoes of gasoline for coastwise shipment circulated among the trade.

Gasoline prices showed a steady upward tendency. Business closed the latter part of the week brought approximately 0.375 cent per gallon more than sales consummated during the early days.

On March 24, a majority of suppliers gave 7.75 cents, 8.50 cents, and 8.75 cents, respectively, as their ideas of prices for new business on U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasolines. Based on buying prices in the field, the foregoing were asserted to be the lowest prices at which business profitably could be taken on at the Gulf, although a few suppliers were of the opinion that these prices might be shaded 0.125 cent with companies operating refineries at the Gulf.

A leading Independent company sold approximately 64,000 barrels of U. S. Motor and 64-66, 375 end point gasoline to its French subsidiary on March 19 at 7.25 cents and 8.50 cents, respectively, for lifting between April 15 and May 15. These prices at that time were considered 0.25 to 0.5 cent under the general market, but the supplier reported his company was forced to lower prices to meet competition.

The next cargo was closed two days later. It consisted of approximately 50,000 barrels of U. S. Motor and 64-66, 375 end point gasoline for May 25-June 25 shipment to a French company. A leading New York broker negotiated the deal for an Independent refiner and the prices obtained were 7.625 cents and 8.625 cents, respectively.

What the trade considered as evidence of the fact that foreign buyers were convinced the market was definitely pegged at higher levels resulted from the purchase made by a Scandi-

(*Continued on page* 112)

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f.o.b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Mar. 26	Mar. 19	Mar. 12
U.S. Motor gasoline, New York harbor	.75	8.75	8.50
U.S. Motor gasoline, Philadelphia	8.75 - 9.00	8.75	8.50
U.S. Motor gasoline, Boston district	9.00 - 9.25	9.00 - 9.25	9.00 - 9.25
U.S. Motor gasoline, Providence district	9.00 - 9.25	9.00 - 9.25	8.75 - 9.25
U.S. Motor gasoline, Baltimore	8.75	8.50 - 8.75	8.50
U.S. Motor gasoline, Norfolk	8.75	8.50 - 8.75	8.50
U.S. Motor gasoline, †Wilmington, N. C.	8.75	8.50	8.50
U.S. Motor gasoline, Charleston	8.50	8.50	8.25
U.S. Motor gasoline, Savannah	8.00	7.75 - 8.00	7.75 - 8.00
U.S. Motor gasoline, Jacksonville	8.00	7.75 - 8.00	7.75 - 8.00
California U.S. Motor gasoline, †New York Harbor	8.75 - 9.00	8.75 - 9.00	8.50 - 8.75
California U.S. Motor gasoline, Baltimore	9.00	9.00	8.75
California U.S. Motor gasoline, Philadelphia	8.75	8.75	8.50
Water white kerosene, New York Harbor	7.00	7.00	7.00
Water white kerosene, Philadelphia	6.50 - 7.00	6.75 - 7.00	6.75 - 7.00
Water white kerosene, Baltimore	7.25 - 7.50	7.25 - 7.50	7.25 - 7.50
28-34 gas oil, New York harbor	4.50 - 4.75	4.50 - 4.75	4.50 - 4.75
28-34 gas oil, Boston district	4.50 - 4.75	4.50 - 4.75	4.375- 4.75
38-42 furnace oil, New York harbor	5.50 - 5.75	5.50 - 5.75	5.50 - 5.75
36-40 furnace oil, Boston district	5.50 - 5.75	5.50 - 5.75	5.50
Grade C bunker oil, New York harbor	$1.35	$1.35	$1.35
Grade C bunker oil, Boston district	$1.35	$1.35	$1.35
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.

MEDICINAL OILS

Russian 885-890 s.g., 325-330 vis	$0.80 - 0.90	$0.80 - 0.90	$0.80 - 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 - 0.77	$0.67 - 0.77	$0.67 - 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 - 0.75	$0.65 - 0.75	$0.65 - 0.75

†Only one refiner quoting.

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Mar. 26	Mar. 19	Mar. 12
U. S. Motor gasoline	24.65	24.65	23.90
43-45, 150 w.w. kerosene	17.90	17.90	17.90
42-44, 110 s.w. kerosene	16.90	16.90	16.90
CYLINDER OILS			
Bright stock, dark	32.50 -34.00	33.00 -34.50	33.00 -34.50
600 D filtered	30.00 -31.00	30.50 -31.00	30.50 -31.00
600 Warren E filtered	23.00 -25.00	24.00 -25.00	24.00 -25.00
600 s.r. unfiltered	16.00 -17.00	16.00 -17.00	16.00 -17.00
650 s.r. unfiltered	18.00 -19.50	18.00 -19.50	18.00 -19.50
600 flash s.r.	20.00 -21.00	20.00 -21.00	20.00 -21.00
630 flash, s.r.	31.00 -34.50	32.00 -34.00	32.00 -34.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00	20.00	20.00
250 vis. No. 6 color	19.00	19.00	19.00
200 vis. No. 6 color	18.50	18.50	18.50
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	24.00	24.00	24.00
180 vis. No. 3¼ color	20.00	20.00	20.00
100 vis. No. 2¼ color	15.75	15.75	15.75
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	35.00	35.00	35.00
500 vis. No. 6½ color	33.00	33.00	33.00
400 vis. No. 7¼ color	31.00	31.00	31.00
300 vis. No. 6 color	30.00	30.00	30.00
200 vis. No. 3¼ color	24.00	24.00	24.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)

WHITE CRUDE SCALE (In barrels)

	Mar. 26	Mar. 19	Mar. 12
122-124 A.m.p.	3.15 - 3.25	3.15 - 3.25	3.20 - 3.25
124-126 A.m.p.	3.15 - 3.25	3.15 - 3.25	3.20 - 3.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00	4.00	4.00
125-127 A.m.p.	4.00	4.00	4.00
128-130 A.m.p.	4.125- 4.25	4.125- 4.25	4.125- 4.25
130-132 A.m.p.	4.25 - 4.375	4.25 - 4.375	4.25 - 4.375
133-135 A.m.p.	5.50	5.50	5.50
135-137 A.m.p.	6.00	6.00	6.00
YELLOW CRUDE SCALE			
124-126 A.m.p.	2.875- 3.00	2.875- 3.00	3.00

*Prices nominal.

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over unless otherwise noted, representing sellers' opinions, except those prices specified to the contrary.)

GASOLINE	Mar. 26	Mar. 19	Mar. 12
U. S. Motor	7.75	7.25 - 7.75	*7.125
60-62, 400 e.p.	8.25	8.00 - 8.25	8.00
61-63, 390 e.p.	8.50	8.25 - 8.50	*8.125
64-66, 375 e.p.	8.75	8.50 - 8.75	*8.375
U. S. Motor, cases (cargoes)	$1.70	$1.65 -$1.70	$1.60
64-66, cases (cargoes)	$1.80	$1.75 -$1.80	$1.75

*Sales only.
†Quotation to inquiries only.

KEROSENE			
44 water white	6.75	6.50 - 6.75	*6.50
41-43 prime white	5.75	5.50 - 5.75	*5.50
Water white, cases (cargoes)	$1.55	$1.55	$1.55
Prime white, cases (cargoes)	$1.45	$1.45	$1.45

*Sales only.

DOMESTIC GAS & BUNKER OILS			
26-32 translucent gas oil	3.75 - 4.00	3.75 - 4.00	3.875- 4.00
Grade C bunker oil	$1.05 -$1.15	$1.05 -$1.15	$1.05 -$1.15
Grade C bunker oil, cargoes	$0.90 -$0.95	$0.90 -$0.95	$0.90 -$0.95

MEXICAN CRUDE AND BUNKER OILS (F.O.B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.05	$1.05	$1.05
Grade C bunker oil, for bunkering purposes, taxes paid	$1.20	$1.20	$1.20

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F.; cold test 0)
(Tanker, f.o.b. Houston)

100 vis. No. 2 unfiltered pale	6.00	6.00	6.00
200 vis. No. 3 unfiltered pale	7.50 - 8.00	7.50 - 8.00	7.50 - 8.00
300 vis. No. 3 unfiltered pale	8.875- 9.00	8.875- 9.00	8.875- 9.00
500 vis. No. 3½ unfiltered pale	11.00 -11.25	11.00 -11.25	11.00 -11.25
750 vis. No. 4 unfiltered pale	12.50 -13.00	.....	.....
1200 vis. No. 5 unfiltered pale	15.50 -16.00	.....	.....
200 vis. No. 5-6 red oil	6.875- 7.00	6.875- 7.00	6.875- 7.00
300 vis. No. 5-6 red oil	8.00 - 8.25	8.00 - 8.125	8.00 - 8.125
500 vis. No. 5-6 red oil	9.00 -10.00	9.50 -10.00	9.50 -10.00
750 vis. No. 5-6 red oil	11.25 -11.50	.....	.....
1200 vis. No. 5-6 red oil	14.00 -14.50	.....	.....

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Mar. 26	Mar. 19	Mar. 12
Gasoline, U. S. Motor, 53-55 Gravity	6.25	6.25	6.125- 6.25
Gasoline, U. S. Motor, blends and special cuts	7.00 - 8.00	7.00 - 8.00	7.00 - 8.00
Gas Oil, 30-34, per barrel	$1.05 -$1.10	$1.05 -$1.10	$1.05 -$1.10
Diesel Oil, 27 plus, per barrel	$0.95 -$1.05	$0.95 -$1.05	$0.95 -$1.00
Bunker oil, 14-18, per barrel	$0.80 -$1.00	$0.80 -$1.00	$0.80 -$1.00
Fuel oil, 14-18, per barrel	$0.67 -$1.00	$0.67 -$1.00	$0.67 -$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 - 5.00	4.50 - 5.00	4.50 - 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.70 -$1.80	$1.70 -$1.80	$1.70 -$1.80
Kerosene, 38-40 w.w., 125-150 flash	$1.35 -$1.45	$1.35 -$1.45	$1.35 -$1.45

Crude Oil Prices, as Posted by Major

(Crude prices for years 1924-1925-1926-1927 in

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$2.80
Bradford District Oil in National Transit Lines (Bradford District)	2.80
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	2.65
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	2.60
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.35
Keister Grade in National Transit Lines (Butler Co)	1.10
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.35
Corning Grade in Buckeye Pipe Lines (Ohio)	1.55
Corning, O. heavy grade	1.45
*Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.45
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

*Somerset oil run prior to Oct. 1922, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Wooster	$1.57	Plymouth	$1.23
Lima	1.55	West Kentucky	1.33
Waterloo	1.20	*Canadian Petro.	1.95
Indiana	1.32	*Oil Springs	2.02
Princeton	1.50	*Posted by Imperial Oil Ltd.	
Illinois	1.50		

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Feb. 21, 1928

28-28.9	$0.96	41-41.9	$1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76
40-40.9	1.40		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective Feb. 21, 1928

Below 25	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

Humble Prices (Cont'd)

28-28.9	$0.96	37-37.9	$1.31
29-29.9	1.01	38-38.9	1.34
30-30.9	1.06	39-39.9	1.37
31-31.9	1.11	40-40.9	1.40
32-32.9	1.16	41-41.9	1.43
33-33.9	1.19	42-42.9	1.46
34-34.9	1.22	43-43.9	1.49
35-35.9	1.25	44 and above	1.52
36-36.9	1.28		
Mirando, Tex			$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

Feb. 21, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 30	$0.75
30-30.9	0.90
31-31.9	1.05
Glasscock and Howard Counties	$0.60
Chalkfield (Howard Co.)	$0.80
Iatan district	$0.93
Corsicana heavy	$1.00

Carter Oil Co.

(Oklahoma and Kansas)

Feb. 21, same schedule as Prairie plus these grades:

24-24.9	$0.76	26-26.9	$0.86
25-25.9	0.81	27-27.9	0.91

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective Feb. 21, 1928

Hutchinson and Carson Counties:

Below 31	$0.60	38-38.9	$0.88
31-31.9	0.65	39-39.9	0.91
32-32.9	0.70	40-40 9	0.94
33-33.9	0.73	41-41.9	0.97
34-34.9	0.76	42-42.9	1.00
35-35.9	0.79	43-43.9	1.03
36-36.9	0.82	44 and above	1.06
37-37.9	0.85		

Wheeler County:

Below 29	$0.60	37-37.9	$0.95
29-29.9	0.65	38-38.9	0.98
30-30.9	0.70	39-39.9	1.01
31-31.9	0.75	40-40.9	1.04
32-32.9	0.80	41-41.9	1.07
33-33.9	0.83	42-42.9	1.10
34-34.9	0.86	43-43.9	1.13
35-35.9	0.89	44 and above	1.16
36-36.9	0.92		

Gray County:

Below 27	$0.60	36-36.9	$1.02
27-27.9	0.65	37-37.9	1.05
28-28.9	0.70	38-38.9	1.08
29-29.9	0.75	39-39.9	1.11
30-30.9	0.80	40-40.9	1.14
31-31.9	0.85	41-41.9	1.17
32-32.9	0.90	42-42.9	1.20
33-33.9	0.93	43-43.9	1.23
34-34.9	0.96	44 and above	1.26
35-35.9	0.99		

WEST TEXAS

Humble Oil & Refining Co.

Effective Aug. 23

Crane, Upton, Crockett and Pecos Counties	$0.60

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton and De Soto.

Effective Feb. 21, 1928

Below 28	$0.91	40-40.9	$1.40
28-28.9	0.96	41-41.9	1.43
29-29.9	1.01	42-42.9	1.46
30-30.9	1.06	43-43.9	1.49
31-31.9	1.11	44-44.9	1.52
32-32.9	1.16	45-45.9	1.55
33-33.9	1.19	46-46.9	1.58
34-34.9	1.22	47-47.9	1.61
35-35.9	1.25	48-48.9	1.64
36-36.9	1.28	49-49.9	1.67
37-37.9	1.31	50-50.9	1.70
38-38.9	1.34	51-51.9	1.73
39-39.9	1.37	52 and above	1.76

*Smackover, below 24	$0.75
* do 24 and above	.90
Bellevue	1.25
Cotton Valley	.75
**Urania, La	.75
†East El Dorado	1.00

**Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

*Smackover prices posted on Feb. 7 by S. O. La., Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia; on Feb. 6, by La. Oil Refg. Corp.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp.

Below 28	$0.85	30-30.9	$0.91
28-28.9	0.87	31-31.9	0.93
29-29.9	0.89	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

(*Continued from Page* 110)

navian company March 22. This concern is acknowledged by the trade as being one of the most careful shoppers among European oil companies. As recently as March 12 this company reluctantly paid 7.125 cents, 8.125 cents, and 8.375 cents, respectively, for a cargo of U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline, and the deal was closed after a great deal of dickering about prices which lasted for approximately three weeks. Their inquiry this week for approximately 70,000 barrels of the same three grades for June lifting at the Gulf stood in the market only three days before being closed. The buyers were unable to better 7.75 cents on U. S. Motor gasoline and subsequently confined the purchase to 63,000 barrels of 61-63, 390 end point and 64-66, 375 end point, for which they paid 8.375 cents and 8.625 cents, respectively.

Brokers covering on short sales failed to obtain better prices than were quoted generally to the foreign trade. The inquiry for a cargo of 64-66, 375 end point gasoline, water white and prime white kerosene remained open at the close of business March 24. The cargo was sold short to a French company the forepart of March at 8.125 cents, 6.4375 cents and 5.4375 cents. Bids for suppliers to cover were gradually raised to the point where the broker was offering 8.50 cents, 6.50 cents and 5.50 cents with still no takers.

Three Atlantic seaboard buyers were in the market for cargoes of U. S. Motor gasoline and all reported they were encountering considerable difficulty in bettering 7.625 cents. They also reported options at this price expired March 24.

The demand for kerosene was comparatively quiet and suppliers' opinions of prices were generally unchanged over last week. Water white goods was quoted largely at 6.50 to 6.75 cents and a few suppliers who have none in storage at the Gulf said they would have to obtain 6.875 cents to show a profit on new purchases in the field. Prime white kerosene was quoted at 5.50 to 5.75 cents.

The gas oil market was dull with 26-32 gravity goods still quoted at 3.75 to 4 cents a gallon.

Three cargoes of grade C bunker oil were reported sold at slightly less than $0.90 a barrel, but a majority of suppliers were asking this as a minimum. Several refiners quoted $0.95 for high gravity oil. Bunker prices were unchanged at $1.05 in the New Orleans district and $1.15 further west in the Gulf.

TULSA—Keith Crouse, cashier of the land department, Prairie Oil & Gas Co.'s Tulsa offices, has been made agent for the eastern New Mexico district, effective April 1. His headquarters will be in Roswell.

Purchasers, in All Fields (in Effect March 26)

OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Feb. 21, 1928)

‡Salt Creek below 29	$0.96
" " 29-29.9	1.01
" " 30-30.9	1.06
" " 31-31.9	1.11
" " 32-32.9	1.16
" " 33-33.9	1.19
" " 34-34.9	1.22
" " 35-35.9	1.25
" " 36-36.9	1.28
" " 37 and above	1.31
Elk Basin	1.33
Grass Creek light	1.33
Big Muddy	$1.25
Lance Creek	1.33
Rock Creek	1.25
Mule Creek	1.10
Rex Lake	1.10
‡Osage	1.33
‡Cat Creek, Mont.	1.33
Sunburst, Mont.	1.50
‡Hogback, N. Mex.	1.38
Artesia, N. Mex.	1.00

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall, McKittrick, Kern River	Olinda-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	.85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	Mar. 26	Mar. 19
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.65-0.70	$0.65-0.70
Sal Soda wks.	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$3.66	$3.66
Chloride of Lime, cwt., wks.	$2.00	$2.00
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks, lb.	3.50-5.00	5.50-5.75
Litharge, powdered, casks, cwt.	$8.50	$8.50

Compounders' Supplies

	Mar. 26	Mar. 19
Vegetable Oils		
Linseed carloads, spot, lb.	9.90	9.90
Tanks, spot	9.10	9.10
Soya Bean, Tanks, coast, lb.	*9.50	*9.50
Oleic Acid		
Distilled, tanks, lb.	8.25	8.25
Distilled, bbls, lb.	9.00	9.00
Saponified, tanks, lb.	8.75	8.75
Saponified, bbls, lb.	9.50	9.50
Lard Oils		
Prime Winter Strained, lb.	15.75	15.75
Extra Winter Strained, lb.	12.75	12.75
Extra, lb.	12.25	12.25
Extra No. 1, lb.	11.50	11.50
No. 1, lb.	11.25	11.25
No. 2, lb.	10.75	10.75
Tallow oil, lb.	11.375	11.375
Neatsfoot Oil		
Pure, bbls, lb.	15.75	15.75
Extra, bbls, lb.	11.75	11.75
No. 1, bbls, lb.	11.50	11.50
Cold Pressed, lb.	18.50	18.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal	60-62	60-62
Light Pressed, tank cars, N. Y., gal.	52	52
White, gal.	65-66	65-66
Yellow bleached, gal.	63-64	63-64
Whale, extra winter bleached, gal.	82	82
Naval Stores		
Steam distilled turpentine, N. Y., gal.	57	56
Steam distilled turpentine, Savannah, gal.	52	51
Gum turpentine, N. Y., gal.	62.50	59.50
Gum turpentine, f.o.b. cars Savannah, gal.	56.25	55
Wood Rosin F, N. Y., bbl.	$8.30	$8.30
Wood Rosin F, Savn'h, bbl.	$7.50	$7.50
Gum Rosin B, N. Y., bbl.	$8.10	$8.35
Gum Rosin B, f.o.b. cars Savannah, bbl.	$7.40	$7.65
Rosin oil, pure, gal.	55	55
Rosin oil, compounded, gal.	47	47
Pine Tar		
Kiln burnt, bbl.	*$13.00	*$13.00
Retort, bbl.	$16.00	$16.00
Alcohol		
Denatured, Formula 5, in bbls., per gal.	50-54	50-54

*Nominal.

Spring Weather Gives Fillip To Chicago Resale Market

Staff Special

CHICAGO, March 24

PLEASANT early spring weather was the real feature of the week in the Chicago resale market. Nearly every day was favorable for motoring and reports from jobbers and refiners who operate their own stations indicated that gasoline consumption was heavy for the season. Roads through Indiana and Illinois were reported in good condition while in Michigan, Wisconsin and Minnesota conditions were less favorable.

Practically all sellers in the local market reported good demand for gasolines, especially during the latter half of the week. Nearly all sales were for immediate shipment. Several refiners and marketers reported that jobbers were reluctant to buy over April at present prices. Interest centered mainly on the U. S. Motor and the 60-62, 437 e.p. grades.

Sales of 58-60 U. S. Motor gasoline were reported at figures ranging from 6.125 to 6.50 cents. However, bulk of sales were at 6.25 to 6.375 cents over most of the week. Sales were reported Saturday at 6.25 to 6.50 cents, with the majority at 6.375 cents. Nearly all sellers advanced their quotations on this grade .125 cent during the week and some went up .25 cent.

Domestic demand for the higher gravity gasolines was only fair this week but heavy export buying in Texas and Oklahoma has helped the local situation. Prices on all grades were up approximately .125 cent by Saturday. The 60-62, 437 e.p. moved at 6.25 to 6.50 cents Monday, Tuesday and Wednesday; at 6.375 to 6.50 cents Thursday; and was at 6.50 cents flat Saturday.

Gasoline of 60-62, 400 e.p. was at 6.50 to 6.75 cents in first half of the week and at 6.625 to 6.75 cents thereafter. The 64-66, 375 e.p. goods closed the week at 7 to 7.125 cents, after moving at 7 cents flat until Thursday.

Demand for kerosene also reflected the pleasant weather. Sellers reported consistent demand all week and several refiners reported "sold up" on this product. Prices were fractionally higher on the 41-43 w.w. grade as the week closed. Most goods moved at 4.375 cents until Saturday, when several sellers reported moving goods at 4.50 cents.

Distillate demand was quiet all week. The 38-40 straw opened at 3.125 to 3.375 cents Monday and moved at 3.125 to 3.25 cents thereafter.

Inquiry for 1,000,000 gallons of 32-36 ordinary dark gas oil reported in PLATT'S OILGRAM March 17 was closed March 20. The business was split into four orders of 250,000 gallons each and went at a price reported to be 2.50 cents, Group 3 freight basis.

Most sellers reported slightly better demand for 32-36 ordinary dark gas oil this week at prices unchanged over last week. This grade of goods moved at 2.50 to 2.625 cents. Demand for the zero grades of gas oil has fallen off and prices were fractionally lower as the week closed. The 32-36 dark zero moved at 2.875 to 3 cents on Monday, Tuesday and Wednesday; at 2.875 cents flat Thursday, and closed the week at 2.75 to 2.875 cents. Straw zero gas oil of 32-36 gravity closed Saturday at 3 cents, after moving at 3 to 3.125 cents most of the week.

Fuel oils continued to be in steady demand at price levels maintained for the past two weeks. Although still not easy to get for spot shipment, some sellers said that most grades were more freely offered than for some time.

Fuel oil of 28-30 gravity was moved at $1.00 to $1.075. Fuel oil of 24-26 and 22-26 gravities sold at $0.85 to $0.90 and the 18-22 grade was unchanged at $0.80 to $0.90. Smackover treated fuel quotations and sales continued at $0.90 to $0.95.

Variable weather conditions will prevail throughout Standard of Indiana territory next week. One or two precipitation periods will occur with frequent changes of temperature.

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California Market's Trend is Upward

LOS ANGELES, March 24.—One large southern California refinery this week is out of the export gasoline market because it is sold up through April. Another refiner came into the market at 6.25 cents early in the week but later was refusing to quote any price.

One marketer this week was offering to buy a cargo of U. S. Motor gasoline at 6.25 cents but up to March 23 had no takers.

The gasoline tank car market is also stronger. One small refiner was asking 8.75 cents this week for shipment to California destinations, but several major companies were asking 9 cents without tax for same movement. Companies who are selling for movement to points outside the state, are now asking 7.50 cents and up against a former price of 7 cents and up.

Spot natural gasoline is moving at 8 to 8.50 cents. One manufacturer refused to sell at less than 8.75 cents. Virtually all refineries have contracted for their demands for natural gasoline over a period, and there is little spot goods on the market. The demand is not great.

Fuel oil prices are steady.

Week's Price Changes Tank Wagon Markets

(*Continued from Page* 108)

Smith, to 16 cents and 19 cents respectively, including 3 cent Arkansas tax, **March 19.**

Standard of Louisiana—Correction: Prices at Little Rock have been in error since Feb. 29 issue. On Feb. 27 t.w. price gasoline was advanced 2 cents, and s.s. price 3 cents, to 18 cents and 19 cents respectively, including 5 cent state tax. On Feb. 28 t.w. and s.s. advanced 1 cent, and on March 15, t.w. and s.s. advanced 1 cent, bringing prices to 20 cents and 21 cents respectively, including tax.

Continental Oil—S.s. price only of gasoline advanced 1 cent, Salt Lake City, to 22 cents, **March 21.**

* * *

Kerosene Changes

Magnolia Petroleum—Kerosene prices advanced 1 cent, Fort Smith, to 12 cents t.w., **March 19.**

OIL STOCKS AND FINANCES

National Petroleum News

Richfield to Pay Small Extra in Stock

LOS ANGELES, March 23.—Richfield Oil Co. has declared a stock dividend of 25 cents, par value, or 1 per cent a share on the common stock as well as the 25-cent cash dividend. Arrangements have been made with the company's fiscal agents, Bond & Goodwin & Tucker, Inc., and Newberger-Parsons Co., to buy and sell fractional shares. The company in a statement said:

"James A. Talbot, president, said that the action of the directors in increasing the dividend was in recognition of the present rate of earnings of the company and its substantial growth in earnings and assets during the past year. The dividend increase, he stated, through the declaration of dividend payable in common stock, would give the stockholders the benefit arising from the increasing earnings without impairing the working capital position of the company."

Vacuum May Expand Markets

NEW YORK, March 24.—Expansion of the marketing facilities of the Vacuum Oil Co. possibly through an arrangement with the Anglo-American Oil Co., Ltd., in the British Isles and by other arrangements in Portugal, is expected if the stockholders approve an increase in the capital stock from $70,000,000 to $175,000,000 at their annual meeting March 31. There also is belief here that a large stock dividend will be declared.

Of the contemplated increase in capital stock $10,000,000 is to be set aside for subscription by employes.

Texas-Calpet Merger Progresses

NEW YORK, March 23.—More than 80 per cent of the capital stock of the California Petroleum Corp. has been deposited for exchange for The Texas Corp. in the consolidation of the two enterprises. The time for depositing of the California Petroleum stock expires March 31. The time limit was originally set for March 3.

The exchange basis is two shares of California Petroleum for one of Texas. Fractional Texas shares will not be issued, it has been announced, but half shares may be bought for $30 each to make up full shares.

Dividend Omissions Cut Amount Paid by Standard Oil Group

NEW YORK, March 24

CASH dividends distributed to stockholders of companies that comprise the Standard Oil group approximated $48,034,626 the first quarter of 1928, according to a compilation made by Carl H. Pforzheimer & Co., New York, specialists in Standard Oil securities.

Dividends for the first quarter of this year compare with $55,804,755 distributed in the final quarter of 1927 and $55,873,413 in the first quarter of last year.

Reduced dividend payments in the first quarter of this year are due mainly to omissions of quarterly payments and reductions in the usual rates due to adverse trade conditions. Prairie Oil & Gas Co. made no disbursement in the first quarter of 1928 as against a payment of $1,200,000 in the first quarter of 1927.

While Standard Oil Co. of California paid dividends at the same rate as in the final quarter of 1927, the amount was $1,574,262 less than that paid in the first quarter of 1927, due to the omission of the extra dividend of 12½ cents a share.

Ohio Oil Co. paid only the regular quarterly dividend of 50 cents a share or $1,200,000 in the first quarter of this year which compares with a payment of $1,800,000 in the fourth quarter of 1927 and $2,400,000 in the first quarter of last year.

Continental Oil Co., in omitting its usual quarterly dividend of 25 cents a share, reduced dividend payments $1,074,157.

The record of quarterly cash disbursements in recent years is as follows:

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Full Year
1928	$48,034,626	.....	.....	.....	.....
1927	55,873,413	$54,291,615	$47,728,440	$55,804,755	$213,698,223
1926	40,580,317	50,618,451	46,427,278	62,685,548	200,327,594
1925	34,355,618	41,905,728	35,140,584	42,104,169	153,506,099

Shaffer Oil Refinances Its Funded Debt

CHICAGO, March 26.—Following sale of $10,000,000 6 per cent convertible gold notes, due March 1, 1933, Shaffer Oil & Refining Co. has called for redemption April 13 all its outstanding 6 per cent first mortgage gold bonds, due June 1, 1929. The note issue was put on the market at 98½ and interest to yield 6.35 per cent.

The notes contain an indenture which entitles the holder to exchange them for Shaffer common stock on a basis of two shares of common stock for each $100 face value of the notes. Sale of common stock. Proceeds from the sale of the notes and of common stock amounting to more than $13,500,000 will be used to retire the bonds and to reimburse the company's treasury for additions to its property.

Cities Service Offers Stock

NEW YORK, March 17.—Cities Service Co. stockholders of March 29 record are to receive rights to buy one share of common stock for each 10 shares held. Price is to be $45 a share. Cities Service closed on the New York Curb at 58⅝ today. Rights are to expire April 17.

Cumberland to Pay $30

CLEVELAND, March 17.—Forrest M. Towl, president, has notified stockholders of Cumberland Pipe Line Co. that $30 a share will be returned to them this year. It will be necessary to reduce the capital stock, he wrote. Directors favor making the amount of the capital $1,500,000, one half present capitalization.

TULSA—Officers of the Mid-Continent Oil & Gas Association have been moved from the Cosden building to the new Tulsa Club building. The association of Natural Gasoline Manufacturers and the American Association of Petroleum Geologists also maintain headquarters in this building.

TULSA, March 26.—R. L. Morris of the refinery operating department of the Tidal Refining Co., is celebrating the arrival of his first-born son. Russell L. Morris Jr., was born on March 21. He weighed 8 pounds.

Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 24 Sales	First	High	Low	Last	Change
37⅞	27⅝	32⅝	27⅛	(sh) 922,075	N.P.	Amerada Corp.	50cQ	Jan. 31, 28	29,500	29⅝	32½	29⅝	32	+ 2¾
82½	35½	76½	51¼	(sh) 209,180	N.P.	American Republics Corp.	.....		54,300	61¾	72⅝	60	68¾	+ 7⅝
50¼	35	41¾	37½	$56,000,000	$ 25	Associated Oil	50cQ	Mar. 31, 28	90	40¾	40¾	39½	39½	— 1¼
131⅜	104	112½	95¾	50,000,000	100	Atlantic Refining	$1Q	Mar. 15, 28	19,200	107¾	*112½	107	111½	+ 3¼
119	115½	118¼	116	20,000,000	100	do pfd	$1.75Q	Feb. 1, 28	.....	.....	.....	.....	.....	.....
35½	20¾	26½	22⅛	28,725,675	25	Barndsdall Corp. A	s62½cQ	Feb. 6, 28	23,500	22¾	24	22¾	23½	+ ¾
32½	20½	25¾	22	799,775	25	do B	s62½cQ	Feb. 6, 28	.....	.....	.....	.....	.....	.....
32⅞	20	26⅞	24	51,524,150	25	California Petroleum	25cQ	Mar. 1, 28	4,000	25½	26⅛	25½	26	+ ¼
96⅜	65	93¼	71¼	20,785,400	100	General Asphalt	.....		36,600	89	89	84¼	85	— 1
144⅞	107¼	140¼	114	6,792,200	100	do pfd	$1.25Q	Mar. 1, 28	1,900	135	135	130	130	— 5
175¾	60⅛	156⅜	127	25,000,000	100	Houston Oil	.....		46,800	147¼	154¾	144¾	147	+ 2¾
32¾	17⅝	28¼	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	Jan. 30, 28	6,300	26½	26½	25⅝	26⅛	— ⅛
12⅛	7⅝	14	9	$3,280,340	$10	Indian Refining	.....	Dec. 15, 20	21,100	12½	*14	12	14	+ 1½
12	7¼	13¾	8½	4,550,110	10	do ctfs	.....		12,600	12	*13⅜	11⅝	13¼	+ 1¼
112	99	111½	101	2,296,400	10	do pfd	.....	Dec. 15, 21	500	....	*111½	111	111½	+ 3½
37¾	20½	35⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	Feb. 1, 28	3,700	30⅝	32⅛	30	31½	+ ⅛
18⅜	10	12¾	9⅜	(sh) 1,136,500	N.P.	Louisiana Oil Refining	.....		8,100	9⅞	10½	9½	10⅜	+ ½
97	85¾	91	80	$4,000,000	$100	do pfd	$1⅓Q	Feb. 15, 28	10	83¼	83¼	83¼	83¼	— 4¾
22¾	12	18⅛	12½	330,000	N.P.	Maracaibo Oil	.....		3,800	14¼	16⅜	14¼	15⅝	+ 1⅜
58½	31	37½	33	(sh) 2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	33,600	36	36⅞	35⅛	35¾	0
320	200	360	255	$45,942,800	$100	Mexican Petroleum	$3Q	Jan. 20, 28	30	255	300	†255	300	+50
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Jan. 20, 28	.....	.....	.....	.....	.....	.....
9¼	3	8⅝	4⅝	(sh) 945,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	11,900	6¾	8½	7	8	+ 1¼
39⅝	25½	29½	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	12,100	27	27½	26½	27¼	+ ¾
105	97	105½	103¼	$6,718,000	$100	do pfd	$1.75Q	Mar. 1, 28	100	104	104	104	104	+ ½
3¾	1⅝	3⅝	2⅜	24,298,850	10	Middle States	.....	July 1, 23	9,000	2¾	2⅞	2⅝	2¾	0
2¾	1⅜	2¾	1½	5,501,370	10	do ctfs	.....		1,400	2	2	1⅞	1⅞	— ⅛
1⅞	1	1⅝	1¼	(sh) 3,500,000	N.P.	Pacific Oil	.....		4,200	1¼	1⅜	1¼	1¼	0
65⅞	40⅛	46⅜	38¼	$48,807,400	$ 50	Pan American P. & T.	.....	Oct. 20, 27	1,300	42½	43	41⅞	41⅞	— ⅝
66⅜	40¼	46¾	37⅜	121,097,900	50	do B	.....	Oct. 20, 27	30,100	43	43⅛	42⅛	42⅛	— ⅛
37⅞	16¾	21	18¼	(sh) 400,000	N.P.	Pan American Western B.	.....	Jan. 30, 27	1,600	19	19⅞	19¼	19⅞	+ ⅛
18⅞	8	16½	11½	(sh) 198,770	N.P.	Panhandle P. & R.	.....		2,200	13¾	14⅝	13⅛	14	+ ¼
83	54	81	70	$2,935,200	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
60¼	36¼	43½	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	75cQ	Apr. 2, 28	50,600	39	40½	38½	39⅜	+ ½
1⅜	½	¾	½	$29,622,925	$ 25	Pierce Oil Corp.	.....		5,700	¾	¾	½	½	— ¼
24	13½	20½	16¼	15,000,000	100	do pfd	.....	Feb. 1, 22	.....	.....	.....	.....	.....	.....
5½	2½	4⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	.....		6,600	3⅞	4¼	3¾	4	+ ⅛
33⅞	16¾	26	16	$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	13,600	19⅛	22⅜	19	21⅝	+ 2½
50	36⅞	45	41	2,845,350	50	do pfd	.....	May 1, 25	50	43¼	43¼	43	43	— 1¼
33½	25	27½	19	75,959,250	25	Pure Oil Co.	12½cQ	Mar. 1, 28	13,400	21⅞	22¼	21½	22	+ ½
115½	111⅛	112	108	13,000,000	100	do 8% pfd	$2Q	Apr. 1, 28	.....	.....	.....	.....	.....	.....
28⅝	25⅝	32½	24	$29,224,894	$25	Richfield Oil	25cQ	Feb. 1, 28	123,100	29⅝	*32½	29¾	31	+ 1
54½	44¼	48¾	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.343	Jan. 28, 28	4,800	45⅞	46½	45⅜	46	+ ⅛
47⅞	41⅜	43⅜	40⅝	(sh) 77,590	£2	Shell Transport & T.	97c	Jan. 23, 28	800	43⅜	*43⅜	43	43	+ ⅝
31⅝	24⅝	26⅞	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	Mar. 31, 28	14,500	25⅛	26	25⅛	25¾	+ ⅝
26⅜	14¼	24¾	18⅛	$7,208,080	$ 10	Simms Petroleum	.....	Apr. 1, 27	7,900	19	21	19	20	+ ¾
22⅜	15	27⅜	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	.....	May 31, 24	445,000	25¼	*27⅜	23¼	25¾	+ 1¼
104½	97	108	102½	$16,604,600	$100	do pfd	$2Q	Feb. 15, 28	1,300	107	107¾	107	107⅜	+ ⅜
37⅜	24⅛	28¼	25	27,396,590	25	Skelly Oil Co.	50cQ	Mar. 15, 28	10,900	26½	27	26	26½	0
60¾	50⅜	56⅝	53	(sh) 13,016,434	N.P.	S. O. California	62½cQ	Mar. 15, 28	22,700	55¼	56¼	54¾	55¾	+ ⅜
41⅜	35⅛	40¼	37¾	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	Mar. 15, 28	51,500	39	40⅜	38⅞	39¾	+ ¾
34⅛	29¾	31⅜	28¾	427,973,275	25	S. O. New York	40cQ	Mar. 15, 28	25,600	30	30⅜	30	30⅛	0
34⅞	30	42¾	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	Mar. 15, 28	7,200	41⅞	42	40⅝	41⅞	+ ½
101⅝	99	102	100	$5,000,000	$100	do pfd	$1.50Q	Mar. 1, 28	.....	.....	.....	.....	.....	.....
6½	3⅛	3⅞	2½	(sh) 1,121,368	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	5,500	3	3¼	2⅞	3	+ ¼
58	45	55⅜	50	$180,480,550	$ 25	The Texas Corp.	75cQ	Apr. 2, 28	21,900	51½	52⅞	51½	52⅝	+ 1¼
18⅞	12	17	12½	8,380,340	10	Texas Pacific Coal & Oil	15cQ	Jan. 3, 28	5,600	12⅝	13¼	12½	12⅝	+ ⅛
29⅛	19	22¼	19⅝	(sh) 2,168,410	N.P.	Tide Water Oil Co.	20cQ	Mar. 31, 28	800	22	22	22	22	+ ¼
90½	85	90¾	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Feb. 15, 28	400	88	88	88	88	— ¾
19⅛	15¾	17¼	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	15,400	15⅝	15⅝	15	15½	— ¼
90¾	85	87¾	82½	$72,745,900	$100	do pfd	$1.50Q	Apr. 2, 28	1,500	83½	84	82¾	82¾	+ ¼
10⅜	3¾	10½	7¼	(sh) 3,742,029	N.P.	Transcontinental Oil	.....		52,300	8¼	8⅜	7⅞	8	0
56½	39⅝	49¼	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	Feb. 10, 28	42,000	48¾	51	49¼	49½	+ 1
127½	94	125	119⅛	30,844,000	100	Union Tank Car Co.	$1.25Q	Mar. 1, 28	500	121¾	121⅞	121	121¾	+ 1
34½	24½	32⅞	26	(sh) 240,380	N.P.	Warner Quinlan	50cQ	Jan. 3, 28	5,900	28⅞	29⅝	28⅝	28¾	+ ⅜
27½	20	24¼	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	Jan. 20, 28	600	21	21	20½	21	— 1

*New High †New Low ‡Also extras s-Stock Total Sales 1,337,180

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 23 Sales	First	High	Low	Last	Change
9⅞	6⅞	9½	7½	$ 10	Arkansas Nat. Gas..	645	7¾	8	7¾	8	— ⅛
98⅝	80⅞	94	90¾	100	Columbia Gas	32	92½	92½	92½	92½	+ 1⅝
107¾	100	108	108	100	do pfd	.....	.....	.....	.....	.....	.....
15	7½	10	7½	10	Devonian Oil	435	7½	8	7½	8	+ ¼
117½	115	116	115	100	Duquesne Light pfd	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas.	.....	.....	.....	.....	.....	.....
12¼	6	16	12	N.P.	Houston Gulf Gas..	.....	.....	.....	.....	.....	.....
59¼	37¼	55⅝	52½	$ 25	Lone Star Gas	3,185	54	54	x53½	53⅝	+ ⅛
3⅞	3	4	3¼	5	Pittsburgh Oil & Gas	179	3¼	3¼	3¼	3¼	0
8	5½	7¼	6⅝	10	Salt Creek Cons.	.....	.....	.....	.....	.....	.....
26½	17	20	16¾	10	Tidal Osage	250	16¾	17	†16¾	17	0
43	33	33¼	33	N.P.	Waverly Oil Wks. A	10	33	33	33	33	0

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended March 23 Sales	First	High	Low	Last	Change
....	....	....	....	$ 5	Duquesne Oil	.....	.....	.....	.....	.....	.....
95	88	...	...	25	Gulf Oil	.....	.....	.....	.....	.....	.....
....	....	115	115	....	Houston Gulf Gas pfd.	.....	.....	.....	.....	.....	.....
10¾	5½	7⅞	5½	25	Leonard Oil & Dev.	300	7½	7½	7½	7½	+ ⅝
2.70	.30	1.00	.50	10	Omar Oil & Gas	.....	.....	.....	.....	.....	.....
2¼	1⅝	....	....	5	Pittsburgh Oil Dev.	.....	.....	.....	.....	.....	.....
31	19	21¼	17½	5	Plymouth Oil	100	18	18	18	18	— ½
6	5	....	....	5	States Oil	.....	.....	.....	.....	.....	.....
3¼	1½	3¼	2¼	1	Texon Oil & Land	800	3¼	3¼	3⅛	3⅛	— ⅛
23¾	18	16	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend.

Cleveland Stock Market

March 23	Par Value	Bid	Asked	Last Sale
Canfield Oil Co.	100	...	...	...
do pfd	100	100	...	100
Fred G. Clark	10	2⅝	3	2⅝
National Refining Co.	25	35½	40	36
do pfd	100	134½	135	135
Paragon Refining Co.	25	9¾	10½	10
do pfd	100	117	120	123

x Ex-Dividend

Oil Dividends

	Amount	Payable	Stock of Record
Indiana Pipe Line	q. $1	May 15	Apr. 20
do extra	$1	May 15	Apr. 20

Oil Company Earnings

	1927	1926
Gulf Oil Corp.	$13,707,627	$35,098,077
Marray Oil Co.	565,781	346,133
Mid-Continent Pet. Co.	*3,208,575	8,615,711
Skelly Oil Co.	1,438,228	5,691,346
Solar Refining Co.	†478,057	635,347
Standard Oil Co. Ohio	2,335,042	3,207,429
Transcontinental Oil	†1,380,146	1,209,303

*Before federal income taxes. †Loss.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Mar. 24 Sales	First	High	Low	Last	Change
21⅝	17⅞	22¾	18¼	£ 4,126,460	£ 1	Anglo-American Oil	60⅓c	May 31, 27	10,900	20½	20¾	20	20½	+ ⅛
21½	17⅝	20½	18½	.....	£ 1	do cts. non-voting	.....	.....	200	20	20	19¼	19¼	0
3¾	¾	1⅞	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	500	1¼	1¼	1¼	1¼	0
6½	2½	3½	3¼	$ 10,000,000	$ 50	do pfd	.....	.....	100	3¼	3¼	3¼	3¼	0
69	50	56	50	1,000,000	25	Borne Scrymser	‡$1S.A.	Oct. 15, 27	50	52	52	52	52	+ 1¾
60	45	66	58	10,000,000	50	Buckeye Pipe Line	$1Q	Mar. 15, 28	1,000	65	*66	65	65⅞	+ ⅞
126	76½	149¾	117¼	3,000,000	25	Chesebrough Mfg	$1Q	Mar. 30, 28	100	137	137	137	137	+ 9
22⅜	16¼	22½	16	36,057,840	10	Continental Oil	.....	Dec. 15, 27	4,400	17	17¾	16¾	17	0
137	89	105	88	3,000,000	100	Cumberland Pipe Line	$2Q	Mar. 15, 28	1,450	99¾	103	99	100	— 1¾
68½	47	72¾	64½	5,000,000	100	Eureka Pipe Line	$1Q	Feb. 1, 28	150	70½	70½	70¼	70¼	0
13½	3½	8	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	.....	.....	.....	.....	.....	.....
59¾	23	39	27	4,000,000	100	do new pfd	.....	June 30, 26	30	39	39	35	35	— 4
60⅛	35½	48	35	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
68½	54	68	60	73,117,577	25	Humble Oil & Refining	‡30cQ	Apr. 1, 28	7,000	63½	63⅞	62½	63¾	+ ½
182	123¾	206	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	Dec. 15, 27	1,050	200½	202	200	202	+ 1½
64¾	37¾	65¼	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	Mar. 1, 28	2,900	59	59¾	58⅝	59¾	+ ¾
94½	61	84⅜	74⅞	$5,000,000	$ 50	Indiana Pipe Line	†$1Q	Feb. 15, 28	2,800	84	84½	82½	82½	— 2⅛
39	28¼	43	35	(sh) 17,123,444	N.P	International Petroleum	25c	Mar. 15, 28	19,500	36¾	37¾	36⅝	37¾	+ 1
24	13¼	29½	20½	$6,363,350	12.50	National Transit Co	25cQ	Mar. 15, 28	11,200	29¼	29⅜	27⅛	27½	— 1½
44½	31¼	56	37½	5,000,000	100	New York Transit	.....	July 15, 26	550	55	*56	55	56	+ 2
100	70	116	94	4,000,000	100	Northern Pipe Line	‡$3S.A.	Jan. 1, 28	150	112½	113	112½	112½	— 1
67⅞	52	66¾	58	60,000,000	25	Ohio Oil Co	‡50cQ	Mar. 15, 28	2,000	60	60¼	59⅛	60	0
39	12	43¼	29	10,000,000	25	Penn Mex. Fuel	.....	May 21, 25	8,400	41	42⅛	39½	42	+ 3
55½	45⅝	50½	47⅝	60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	7,900	48½	49	48½	48¾	+ ⅛
190	132	223	184	81,000,000	100	Prairie Pipe Line	$2.50Q	Feb. 1, 28	2,600	220	220½	215¼	219	0
201½	175½	178	169	4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 27	250	173	174	†169	169	— 6½
27¼	15½	33½	21	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	800	30	30	29½	30	+ ½
41½	35	40⅛	36¾	20,00,000	25	South Penn Oil	50cQ	Mar. 31, 28	800	38½	38½	38	38¼	— ¼
83	55½	96	70	3,500,000	100	South West Pa. Pipe Lines	‡$1Q	Apr. 2, 28	100	91	92	91	92	+ 4
81½	64⅝	80½	70⅞	228,415,463	25	S. O. Indiana	‡62½cQ	Mar. 15, 28	11,600	73⅛	74⅜	73⅛	74⅛	— ⅜
20⅞	14⅝	18½	15	8,000,000	25	S. O. Kansas	.....	June 16, 24	5,200	15½	*18½	15¼	18¼	+ 2¾
130	111½	132¾	122¼	17,012,559	25	S. O. Kentucky	$1Q	Mar. 31, 28	4,600	124	126½	124	126¾	+ 1⅜
49½	40	43	39⅞	4,559,850	25	S. O. Nebraska	63cQ	Mar. 20, 28	700	41½	42	41½	42	+ ¼
87½	72	79	71	14,000,000	25	S. O. Ohio	62½cQ	Jan. 2, 28	800	71¼	72	†71	71½	— ½
122	117¼	120½	117	7,000,000	100	do pfd	$1.75Q	Mar. 1, 28	20	118½	118½	118½	118½	+ ½
21	14½	26	16	30,734,000	25	Swan Finch Co	.....	Nov. 1, 19	.....	.....	.....	.....	.....	.....
149⅞	95⅛	149	136¾	62,470,800	25	Vacuum Oil	‡50cQ	Mar. 20, 28	4,600	142⅜	143¾	142	142¾	— 1

*New high †New low xEx dividend ‡Also extras.

New York Bonds

Week Ending March 23

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	103¼	103	103	0
Atlantic Refg. deb. 5s	102⅜	101½	102⅜	+ ⅜
Barnsdall Corp. 6s	100⅜	99¾	100	+ ⅜
Barnsdall Corp. 6s ex-war	91½	91	91½	0
Cal. Pet. 5s	100⅜	100¼	100⅜	+ ¼
Cal. Pet. 5½s	102½	102¼	102½	0
General Asphalt 6s	112	110¾	110¾	—1¼
General Petroleum 5s	102¼	102	102¼	+ ½
Humble Oil & Refg. 5½s	102¾	102⅝	102¾	0
Humble Oil 5s	100¾	100⅜	100½	— ⅛
Mid-Cont. Pet. 6½s	105½	105	105½	+ ¼
Pan Amer. P & T 7s	105	105	105	— ⅜
Pan Amer. P & T 6s	103½	102¼	102½	+ ¼
Pan Amer P & T 6s	93⅜	93¼	93¼	— ¼
Pierce Oil deb. 8s	106	106	106	+3
Prod. & Refg. 8s	111	111	111	0
Pure Oil 5½s	100½	100¼	100¼	0
Shell Union 5s	99¼	98¼	99	+ ½
Simms Pet. cvt. 6s	103¾	102	103¾	+1¾
Sinclair Con. Oil 7s	102¼	101	102	+ ⅝
Sinclair Con. Oil 6½s	100¼	98⅝	100	+1⅛
Sinclair Con. Oil 6s D	98⅜	97⅜	98⅜	+ ⅜
Sinclair Crude Oil 5½s	98	97½	98	0
Sinclair Pipeline 5s	95¾	95⅛	95½	0
Skelly Oil 5½s	95	94½	95	0
S. O. N. Y. 4½s	98¾	97⅛	97⅞	+ ⅞
S. O. N. J deb. 5s	103½	103⅜	103⅜	0
Superior Oil 7s	103¾	103¼	103¾	+1¼
Union Oil of Calif. 6s A	110¼	110¼	110¼	0
Union Oil of Calif. 5s C	100⅜	100	100	— ¼
White Eagle 5½s	95⅞	95¼	95⅞	+ ⅜

New York Curb Bonds

Week Ending March 23

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	100	100	100	0
Cities Serv. 5s '36	95½	93⅛	95½	+2⅛
Cities Serv. 6s '66	103⅜	103	103	— ⅛
Cities Serv. G 5½s '42	97⅛	96¼	97⅛	+ ⅛
Cities Serv. G 6s	100	99¼	99¾	+ ¼
Cont. Oil 5¼s	97⅞	97½	97⅞	+ ⅛
Empire Oil 5½s '42	95½	94¼	95½	+1
Galena Oil 7s '30	94	92¼	92¼	—1¾
Gulf Oil 5s '37	102⅛	101½	101½	— ¼
Gulf Oil 5s '47	102	101¾	101¾	+ ⅛
Independent Oil 6s '39	99	98½	99	+ ¼
Phillips Pet. 5¼s '39	94¾	94⅛	94½	+ ½
Richfield Oil 6s '41	101¾	99⅝	101	— ¾
S. O. N. Y. 6½s '33	103⅛	103⅛	103⅛	0
Sun Oil 5½s '39	102	101¾	101¾	— ¼
Trans Con't. Oil 7s '30	107⅞	105	106	—1
Warner Quinlan 6s '42	100	99⅜	99½	— ½

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Mar. 24 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.80	$ 5	Amer. Con. Oilfields	33,100	.85	.88	.80	.85	— 3
7½	2¾	4⅞	3⅛	N.P.	Amer. Maracaibo	3,000	4	4⅛	3¾	4	0
2¾	1	4	2¼	$ 10	Argo Oil	.....	.....	.....	.....	.....	.....
9¾	6¾	9⅞	7¾	10	Arkansas Nat. Gas	700	8¼	8¼	7	7	— 1¼
20½	15½	....	....	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	39¾	32¾	N.P.	British American	200	37¼	37½	37¼	37¼	+ ⅜
28¼	15½	23⅞	18½	25c	Carib Syndicate(new)	13,000	20¾	21⅜	20¼	21¼	— ⅜
26	15⅞	....	....	....	do ctfs. of deposit	.....	.....	.....	.....	.....	.....
58¾	40¼	58⅝	54	$ 20	Cities Service	59,000	58⅝	59⅛	58½	59⅛	+ ⅜
95⅜	87	100	94½	100	do pfd	1,600	98¾	99	98½	98⅝	— ⅛
8⅞	7⅜	9½	8⅞	10	do pfd. B	800	9½	9½	9⅜	9⅜	— ⅛
29¼	22½	28¼	28¼	10	do banker's shares	600	29½	29½	29½	29½	+ 1⅜
3⅞	1⅛	1⅜	1⅛	1	Colombia Syndicate	10,000	1¼	1⅜	1¼	1⅜	— 1⅛
9¾	6¾	7¼	6¾	10	Consolidated Royal	.....	.....	.....	.....	.....	.....
14⅞	9½	14⅜	10	N.P.	Creole Syndicate	17,600	14⅛	14¼	13⅜	13⅝	— ⅜
3	.50	1½	.76	N.P.	Crown Central	2,400	98	99	90	90	— 4
12	4	13½	8⅛	N.P.	Darby Petroleum	500	11¼	11½	11	11¼	— ¾
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	1⅞	1	N.P.	Derby Oil & Refining	600	1	1	1	1	— ¼
16¾	4	....	....	N.P.	do pfd	.....	.....	.....	.....	.....	.....
3¾	1	2	1¼	N.P.	Gibson Oil	1,900	1¼	1⅜	1¼	1¼	— ⅛
2	.40	.53	.51	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	117¼	101⅛	$ 25	Gulf Oil Corp	5,500	106	110	105	110	+ 4
2½	.80	2¾	1½	10	Intercontinent Pet	13,600	2⅝	2¾	2⅛	2¼	— ⅜
2¼	1⅛	1⅞	1¼	N.P.	Kirby Petroleum	200	1¼	1¼	1¼	1¼	— ½
10⅞	5⅛	7⅞	5⅛	N.P.	Leonard Oil & Dev	11,200	7⅛	7¾	7	7⅜	+ ⅛
27½	20	24⅝	20	N.P.	Lion Oil & Refg	.....	.....	.....	.....	.....	.....
59⅜	37	55⅞	52	$ 25	Lone Star Gas	1,800	53½	53¾	53	53¾	+ ¾
2⅞	.80	1⅜	.91	1	Magdalena Synd	9,900	1⅜	1½	1	1	— ¼
21½	20⅞	22⅛	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	40	N.P.	Margay Oil	300	42½	43	42	43	+ 2
3	1½	....	....	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅛	5	**6⅜	4½	N.P.	Mexico-Ohio Oil	1,300	4⅞	4⅞	†4½	4½	— ¼
1½	1	1½	1¼	$ 1	Mountain & Gulf	31,500	1⅜	*1½	1⅜	1⅜	— ⅛
29¼	22¾	28⅝	25⅛	10	Mountain Producers	4,600	26¼	26⅜	25¾	26¼	+ ⅛
5⅞	4⅝	5⅝	4¾	5	New Bradford	4,000	4⅞	5½	4⅞	5⅜	+ ¾
6¼	4	4⅜	4	10	New England Fuel	.....	.....	.....	.....	.....	.....
16	9¼	9⅞	8⅛	1	New Mex. & Ariz	400	8¼	8¼	†8⅛	8⅛	— ¼
13⅞	9	14½	11½	25	New York Oil	1,200	13¾	*14½	13½	14½	+ 1⅜
12¾	9½	12⅝	10¾	N.P.	North Cent. Texas	.....	.....	.....	.....	.....	.....
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs	.....	.....	.....	.....	.....	.....
9⅛	3¼	6	2⅝	N.P.	Pandem	11,200	3¾	3¾	†2⅝	3⅛	— ¼
12⅛	7	10⅞	8½	N.P.	Panapec Oil	4,300	9	9⅜	8¾	9	— ¼
9	7⅝	11⅜	10⅝	$ 25	Paragon Refg	.....	.....	.....	.....	.....	.....
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	6¾	5⅛	$ 10	Pennok Oil	900	5⅜	5½	5⅛	5⅛	— ¼
....	....	4⅛	3⅛	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14	9	25	Red Bank Oil	300	9¼	9¼	†9	9⅛	— 4⅞
15½	3½	6⅜	4⅛	N.P.	Reiter-Foster	2,700	6	6	5	5½	— ½
28⅜	15	27⅜	23¼	$ 25	Richfield Oil pfd	3,400	27	*27⅜	25⅞	26½	+ 1⅜
7	4½	5⅝	4⅞	N.P.	Ryan Consolidated	.....	.....	.....	.....	.....	.....
8	5¼	7¼	6⅝	$ 10	Salt Creek Cons	1,200	6⅝	6¾	6⅝	6⅞	+ ¼
35½	27¼	35	28½	10	Salt Creek Prod	6,500	31¼	31⅝	31	31⅜	0
7	1¼	2	1	5	Savoy Oil	500	1	1	1	1	— ⅛
26½	17	20	13	10	Tidal Osage	9,000	15	17⅜	15	17¼	+ 1¼
23¾	15	18	13⅛	10	do non-voting	1,000	15½	16¼	15	16¼	+ 1¼
92	63½	86	82½	100	Transcontinental pfd	100	84½	84½	84½	84½	+ 1
23¼	7	31	18	10	Venezuela-Mexico	500	30	*31	28⅛	31	+ 2
7⅜	4¼	6¼	4⅞	5	Venezuelan Petrol	2,300	5½	5¾	5½	5½	+ ½
32⅝	19½	22⅞	19⅛	N.P.	Wilcox Oil & Gas	1,200	19⅞	19⅞	19¼	19¼	0
8	4¾	7	5¾	$ 1	Woodley Petroleum	200	6	6	5⅞	5⅞	0
6	1¾	3⅜	2⅛	25	Y Oil & Gas (new)	500	2¾	3	2¾	3	+ ⅛

*New High †New Low xEx Dividend **Revised

Pennsylvania Gasoline Prices are Advancing

CLEVELAND, March 26.—Western Pennsylvania gasoline over the first half of April will cost 0.25 to 0.50 cent a gallon more than was paid in March, canvass of refiners and carload marketers has revealed. The prevailing price of 58-60 U. S. Motor gasoline today was 8.25 cents. The next most often quoted price was 8.375 cents a gallon. Two sources were quoting 8.50 cents for prompt shipment. Two sources were still quoting 8 cents but the volume of gasoline available at this price was small.

One carload marketer March 26 said he could find no gasoline under 8.50 for shipment over the first half of April. He said he regarded the market today at 8.50 to 8.75 cents.

Bright stock manufacturers report improvement in demand and one refiner said his filtered stock business was the heaviest in several years. Steam refined stocks quotations still cover a wide range of prices although it is said the supply of the various standard grades is not plentiful. Price variances are due largely to differences in color, viscosity and other specifications.

Demand for viscous neutrals is holding up well. There have been some price adjustments. White crude scale is slightly cheaper than a week ago.

Gulf Coast Lube Market Stiffer

HOUSTON, March 24.—Gulf Coastal lubricant prices are unchanged over past week. The lower stocks recently brought about by cargo sales of mixed grades eliminated sacrifice sales with the result that market has stiffened somewhat. Jobber demand is satisfactory for the season.

Ohio Gasoline Market

CLEVELAND, March 26.—Gasoline for delivery in Ohio over the first half of April was being quoted March 26 at 9.25 to 9.71 cents a gallon delivered, tax to be added. Price differences were caused mostly by freight differentials.

CUSHING, March 22.—The Blackwell Oil & Gas Co., the Mul-Berry Oil Co. and the Cushing Pipe Line Co. now are maintaining general offices at Cushing. They formerly were at Blackwell. Prominent in the affairs of these companies are R. C. Jones, E. C. Mullendore, E. J. Blank, T. N. Berry, Boone Jones, Rex Winget and George C. White. The same interests operate the Cushing Gasoline & Refining Co. and recently they formed the Cushing Royalty Co.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

REFINERY SUPERINTENDENT. Ten years experience installation and operation Pipe Stills, Shell Stills, Cracking plant and continuous and batch treatment gasoline and kerosene. References. Address Box 52.

RESEARCH CHEMIST—Refinery located in East near New York requires services of research chemist experienced in oil industry. Must possess executive ability, vision, and foresight and be capable of guiding operation of fully equipped research laboratory. Give full particulars as to education, special qualifications, age, salary, present employers and references, all of which will be held confidential and returned to applicants who do not qualify. Address Box 48.

Situations Open

SERVICE STATION DESIGNER AND BUILDER WANTED

capable of making own plans and specifications. Preferably an architect-engineer. Must be familiar with retail station design and operation. Opportunity for connection with large and reputable company.

State if married, education, age, experience, previous salary. Must be prepared to show plans and photographs of work done in past. All communications strictly confidential.

Address Box 56

Old established oil company has opening for two high grade experienced branded-motor-oil salesmen to sell nationally advertised Pennsylvania oil to marketers.

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Address Box 57

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Equipment Wanted

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Single Copies 10¢
Subscription rate $3.50 per yr. in U.S.A. and Mexico (U.S. money)
$4 in Canada
$5 in foreign countries
Trade Mark reg. U.S. Pat. Off.
Members of Audit Bureau of Circulations and Associated Business Papers, Inc

NATIONAL PETROLEUM NEWS

Branch Offices:
LOS ANGELES
Petroleum Securities Building
TULSA.
World Building
NEW YORK
342 Madison Avenue
HOUSTON
612 West Building
CHICAGO
35 Wacker Drive

Published by the National Petroleum Publishing Co., MAIN OFFICE 1213 W. 3rd St., Cleveland, Ohio. Copyrighted 1928

Vol. XX Cleveland, Ohio March 28, 1928 No. 13

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